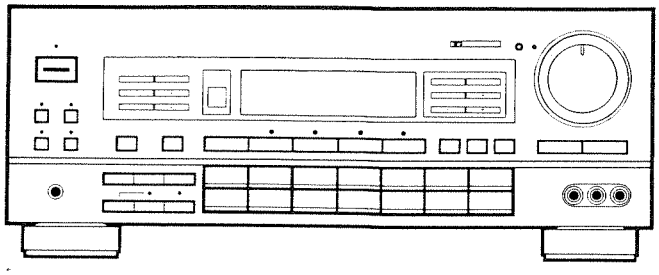
MASTER

Operating Instructions

AV DIGITAL SURROUND AMPLIFIER

VSA-1000

NTSC



Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE
[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

LINE VOLTAGE SELECTOR SWITCHES

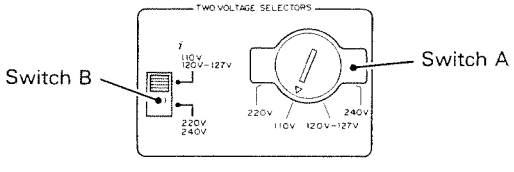
Only multi voltage models are provided with these switches, U.S., Canadian, U.K., Australian and Europe models are not provided with them.

Mains voltages in Saudi Arabia are 127 V and 220 V only. Never use this model set to 110 V in Saudi Arabia.

You will find the line.voltage selector switches on the rear panel. Before your model is shipped from the factory, the switches are set to the power requirements of the destination. Nevertheless, you should check that they are set properly before plugging the power cord into the wall outlet. If the voltage requirements differ, adjust the selector switches as follows. Before adjusting, disconnect the power cord.

1. **Provide yourself with a medium size screwdriver.**
2. **Changing the position of switch A, B.**
   Insert the screwdriver into the slot on the voltage selector and adjust so that the tip of the slot points to the voltage value of your area.
   Changing the position of switch A, B.
   Set it to the power voltage of your area.

NOTE:
Both switches A and B must be in the same voltage.



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The future of sound and vision.

IMPORTANT 1

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
Equipment sold in the U.K. is not supplied with a power plug.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.
RETAIN INSTRUCTIONS – The operating instructions should be retained for future reference.
HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.
FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.
WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
LOCATION – The appliance should be installed in a stable location.
WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.
VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
POLARIZATION – If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.
POWER LINES – An outdoor antenna should be located away from power lines.
NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
DAMAGE REQUIRING SERVICE – The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING – If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.
CART – An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

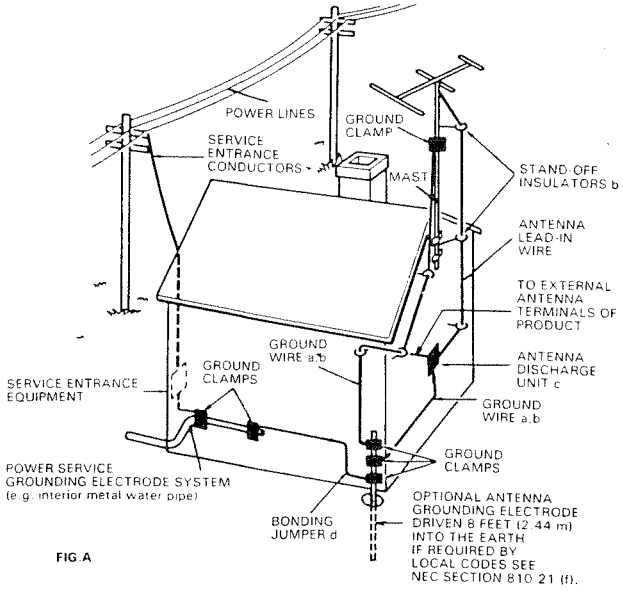

POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND-OFF INSULATORS b
ANTENNA LEAD-IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
ANTENNA DISCHARGE UNIT c
GROUND WIRE a,b
GROUND CLAMPS
GROUND WIRE a,b
SERVICE ENTRANCE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
BONDING JUMPER d
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES SEE NEC SECTION 810-21 (f).

FIG.A

a) Use No.10 AWG (5.3 mm²) copper, No.8 AWG (8.4 mm²) aluminum, No.17 AWG (1.0 mm²) copper-clad steel, bronze wire, or larger as ground wire.
b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
c) Mount antenna discharge unit as closely as possible to where lead-in enters house.
d) Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used.
See NEC Section 810-21 (j).

FEATURES

• BUILT-IN DOLBY PRO LOGIC SURROUND CIRCUIT AND 5 POWER AMPLIFIER MODES.

Enjoy the presence and the expansive effect of surround playback. Four different surround effect and 3-step delay times are available.

• TOTAL OF 290 W HIGH OUTPUT POWER (FTC) [POWER IN]

Surround mode: 100 W + 100 W (front)
20 Hz – 20 kHz, 0.005 % **8Ω
30 W + 30 W (rear) 20 Hz – 20 kHz, 0.08 % **8Ω
30 W (center) 20 Hz – 20 kHz, 0.08 % **8Ω
**Measured by Audio Spectrum Analyzer.

AV PROGRAMMABLE REMOTE CONTROL UNIT

With the attached remote control unit you can operate any Pioneer audio or video component bearing the SR mark. And with additional learning functions a whole AV surround system including TV and VCR from other makers can be controlled. (Some makers' remote control systems, however, are not suitable for programming.)

NOTE:
The keys of this remote control unit can't operate equipment that does not possess the corresponding functions or does not have remote control capability.

• VCR 1 RECORDING SELECTOR FUNCTION

You can record on VCR 1 from VCR2, VCR 3, VDP, VIDEO 1 or VIDEO 2, regardless of other functions.

• S JACKS

There are S (separate) video jacks for VCR 1, 2 (input, output), VDP (input) and VIDEO OUT (output).

• PLENTIFUL AV INPUTS

Audio: TAPE 1/DAT 1, TAPE 2/DAT 2 (MONITOR), LINE, CD, TUNER, PHONO

Video: VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, VIDEO ADAPTOR

• VIDEO SIGNAL SELECTOR

As audio and video sources can be freely combined, you can make your original BGV easily.

• MUTUAL COPYING IS POSSIBLE BETWEEN VIDEO CASSETTE RECORDERS (VCR)

Copying can be carried out freely between VCR 1, VCR 2, and VCR 3. (Copying can be performed between VCR 1 and VCR 2 using the S-VIDEO connectors)

• ACOUSTIC MEMORY

Up to 5 BASS and TREBLE settings can be preset.

• 90/60/30-MINUTE SLEEP TIMER FUNCTION

Remaining time is displayed during the sleep opeartion.

• SOUND FIELD MEMORY FUNCTION

Surround mode, Balance, Delay time, and Acoustic memory are among the 5 presets possible with this function.

• SUPERIMPOSE FUNCTION

The present operational condition is indicated with letters on the TV screen. A blue background is displayed when no video signal is input. (A gray background is displayed if an S-VIDEO connector is used when there is no video signal input.)

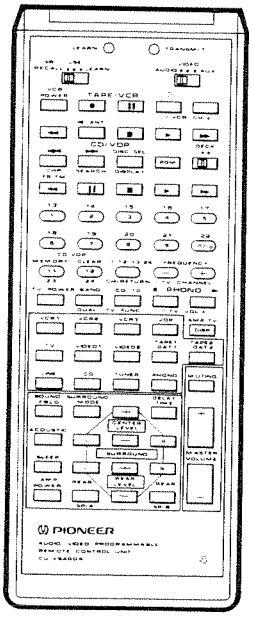
• MULTI-ROOM REMOTE JACK

The optional MR-100 Multi-room remote control unit can be connected to the Multi-room remote IN jack.

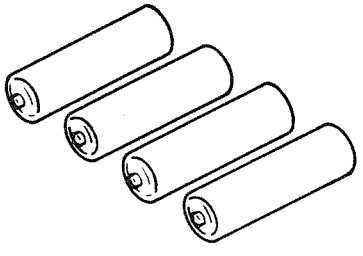
BEFORE USING THE UNIT

• Accessories.

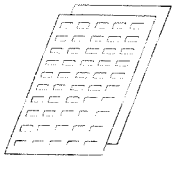
• Remote control unit...1



• LR03 (AM-4) alkaline dry cell battery...4



• Template added...2

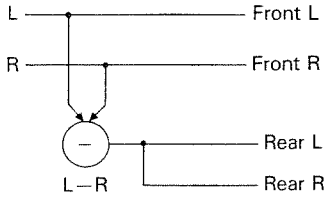


SURROUND EFFECT

This unit has a built in surround processor for adding presence and an expansive effect to the sound.

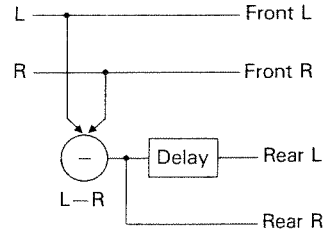
• STUDIO

Select this position to enjoy the effect of listening to music in a recording studio.
The source sound is output as is through the front speakers, with reverberation output through the rear speakers.
The center sound is positioned right between the front speakers. This is particularly suitable for a sound source that has a lot of reverberation.



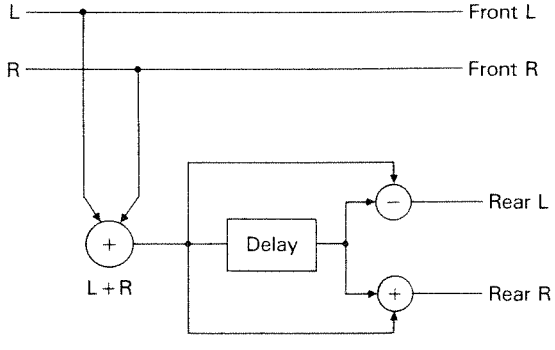
• STADIUM:

Select this position when watching sports programs such as baseball games, football games etc., for a stadium-like effect.
This position is perfect for an even more expansive effect than that produced by STUDIO.



• SIMULATED SURROUND:

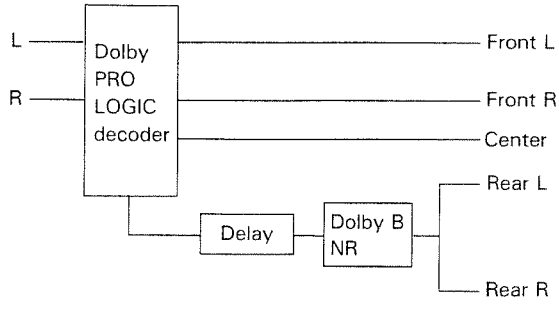
Use this mode for monaural sources. You will obtain an expansive sound, with outstanding presence.
Can also be used with stereo sources.



NOTE:
Only SIMULATED SURROUND operates with a monaural source. In other modes, no sound will be output from the rear speakers.

• DOLBY PRO LOGIC SURROUND

Choose this setting for movies and music (especially Video Discs and video tapes bearing the DOLBY SURROUND mark) playback.
DOLBY PRO LOGIC SURROUND continuously detects the size and direction of the dominant signal and cancels undesirable crosstalk, thereby providing signal emphasis. This results in more effective channel separation for a more powerful surround effect.
When using DOLBY PRO LOGIC SURROUND, a delay time setting of 20 ms is commonly used. Use a different setting if you prefer.



DOLBY PRO LOGIC SURROUND is equipped with the following 3 positions for the CENTER MODE. There is also an OFF position for INPUT BALANCE ADJUSTMENT.

• OFF

Be sure to set to this position when adjusting input balance (Adjustment is impossible in any other position.)

When using a center speaker:

• NORMAL

Low range frequencies, which have little effect on directionality and positioning, are routed to the left and right front speakers. So you can use a relatively small size speaker as the center speaker.

• WIDE

If you use a large size center speaker, choose this setting. The full frequency range of the PRO LOGIC center speaker, from low to high, is routed to the center speaker.

When not using a center speaker:

• PHANTOM

The signal which would have been sent to the center speaker is divided equally between the left and right front speakers.

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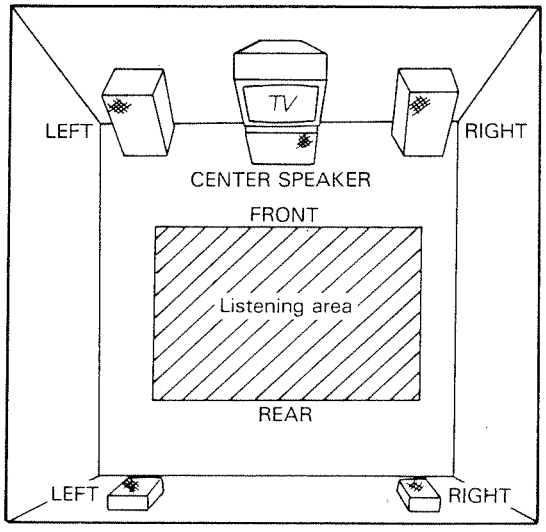
SURROUND SPEAKER INSTALLATION EXAMPLE

To get the best effect out of the surround system, place the speakers as shown below.

A typical surround speaker arrangement



When DOLBY PRO LOGIC SURROUND is used without a center speaker, set the CENTER MODE switch to the PHANTOM position. With DOLBY PRO LOGIC SURROUND, monaural source sound will be heard only from the center channel at settings other than the PHANTOM position.

NOTE:

- *To avoid interference with the picture on a nearby TV set, use magnetically shielded speaker systems. This is particularly important for the center speaker since it is usually located closest to the TV.*
- *Position the left and right channel speakers at equal distances from the TV set.*
- *Position the center speaker above, below, or behind the TV set. Sound may not appear to coincide with the picture if you position it next to the TV set.*
- *Surround speakers are best positioned to set slightly above ear level.*

DOLBY SURROUND LEVEL ADJUSTMENT PROCEDURE

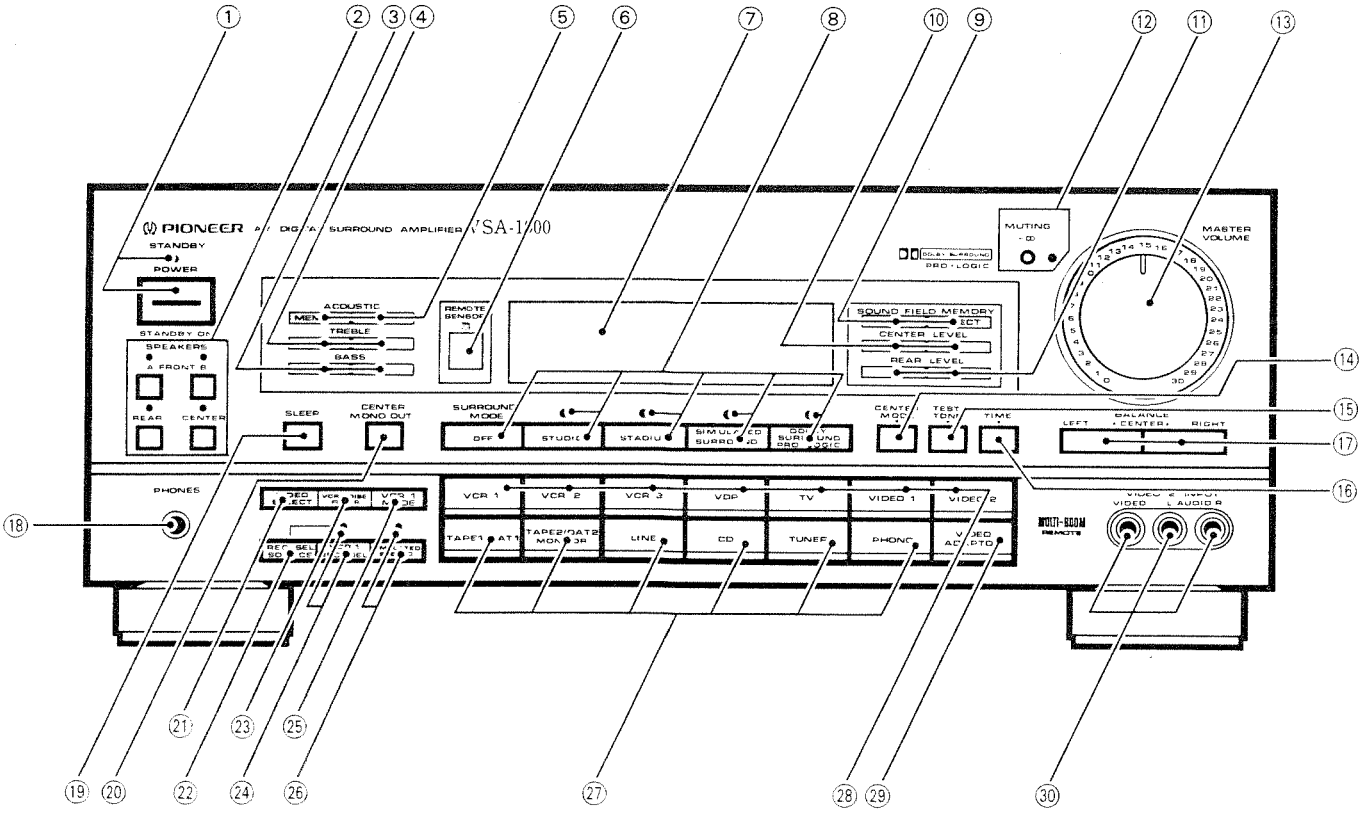
For correct SURROUND reproduction, be sure to perform this adjustment.

1. **Use SURROUND MODE switch to select DOLBY PRO LOGIC SURROUND.**
2. **Use SPEAKER switches to turn on front, rear and center speakers.**
3. **Adjust MASTER VOLUME to a suitable listening level.**
4. **Select a monaural source (such as AM radio) or Dialogue portions of movies.**
5. **Press BALANCE L and R switches together.**
6. **Press CENTER LEVEL + and – switches together.**
7. **Press REAR LEVEL + and – switches together.**
8. **Select the CENTER MODE switch to the OFF position.**
9. **Adjust rear panel INPUT BALANCE knob to the position that gives minimum volume from the front and rear speakers.**
10. **Select CENTER MODE (NORMAL, WIDE, PHANTOM) setting.**
11. **Turn on TEST TONE switch.**
12. **Adjust so that volume is the same from each speakers. Use BALANCE L and R switches, REAR LEVEL + and – switches, and CENTER LEVEL switches.**
13. **Turn off TEST TONE switch when finished.**
14. **Use AUDIO INPUT SELECTOR or VIDEO INPUT SELECTOR to select your desired source.**
15. **Adjust the desired sound level by the MASTER VOLUME.**

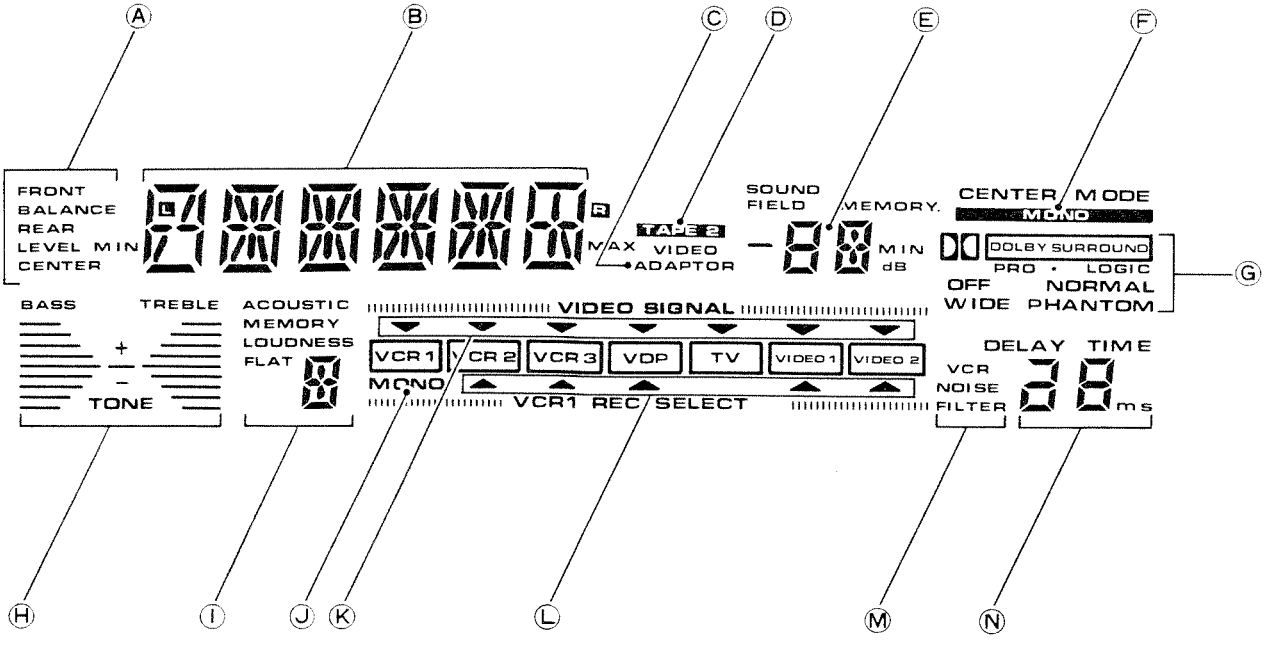
NOTE:

- *Set in the range of 12 to 15 by remote control operation from the listening/viewing position.*
- *The TEST TONE turns off if you operate the INPUT SELECTOR.*

FRONT PANEL FACILITIES



Display section



① POWER STANDBY/ON switch/indicator

- When the power cord is connected to a wall socket, the power will remain on even when the POWER switch is turned off. The unit is in the standby mode.
- The indicator lights when the unit is in the standby mode.
- The accessory remote control unit can also be used to turn the amplifier on or standby (STANDBY function).
- When not using the unit for a long period, disconnect the power cord.

② SPEAKER switches/indicators

ON/OFF switches for the speaker systems. An indicator lights when any of these switches is set to ON.

FRONT A, B:
Switches and indicates for the front speaker systems A, B.

REAR:
Switches and indicates for the rear speaker systems.

CENTER:
Switches and indicates for the front center channel speaker system.

③ BASS control switches

Use to adjust the low-frequency level. Press the + switch to increase low-frequency level, and the − switch to decrease it.
When both sides (+, −) of the BASS control are pressed simultaneously, the base response will be set to the flat (normal) condition.

④ TREBLE control switches

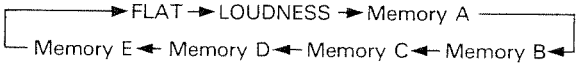
Use to adjust the high-frequency level. Press the + switch to increase high-frequency level, and the − switch to decrease it.
When both sides (+, −) of the TREBLE control are pressed simultaneously, the treble response will be set to the flat (normal) condition.

⑤ ACOUSTIC switches (MEMORY, SELECT)

Five types of tone (bass and treble) control settings can be preset.

MEMORY:
Press this switch to store in memory.

SELECT:
Tone setting changes as follows when pressing this switch repeatedly:



FLAT:
Flat tone characteristics.

LOUDNESS:
Low and high frequencies are emphasized. Use this setting to obtain a full-bodied sound when listening.

Presetting the acoustic memory

1. **Adjust the sound quality as desired using the BASS and TREBLE control switches.**
2. **Press the MEMORY switch.**
3. **Press the SELECT switch and select the sign to which you wish to assign the setting (A — E) while the indicator flashes.**
   - When the indicator lights after flashing, it indicates that the command has been stored in memory. If you don't select memory positions (A — E) while the ACOUSTIC indicator is flashing, nothing will be stored in memory.
   - In this way, the desired tone will be preset in one of the five acoustic memory positions. To preset four other desired tone settings, perform the same operations.
   - To recall the memorized tone settings, press the SELECT switch to select the desired memory position.

NOTE:

- *Even if the power switch is in the STANDBY position, provided the power cord is plugged into an AC wall socket, memory will not be erased. Even if the power cord is disconnected, memory will remain for about 2 weeks.*
- *If the memory is erased, program the presets once more.*

⑥ REMOTE SENSOR window

⑦ Display section

Ⓐ This lights when the front and rear balance and the rear and center volume levels are being adjusted.
During volume adjustment Ⓑ and Ⓔ display the level, and during balance adjustment Ⓑ displays the balance.
Ⓑ This gives alphanumeric display of the component selected by the INPUT SELECTOR.
When adjusting front and rear balance and volume or center volume, this displays balance and volume level.
It also gives alphanumeric display of SLEEP when the sleep timer is operating, and alphanumeric display of TEST when the DOLBY PRO LOGIC SURROUND tone is ON.
Ⓒ This lights when the VIDEO ADAPTOR switch is ON.
Ⓓ This lights when the TAPE 2/DAT 2 monitor is ON.
Ⓔ Displays the SOUND FIELD MEMORY selection.
During center or rear volume level adjustment, the volume level is displayed.
The time remaining when the SLEEP TIMER is operating is also displayed.
Ⓕ In any mode other than DOLBY PRO LOGIC SURROUND, if the CENTER MONO OUT switch is pressed, this lights.
Ⓖ Displays the DOLBY PRO LOGIC CENTER MODE.
Ⓗ Displays the TREBLE and BASS adjustment settings.
Ⓘ Displays the selected ACOUSTIC MEMORY.
Ⓙ Lights when the VCR MONO switch is ON.
Ⓚ Displays the currently selected video signal.
It also displays the video functions. If the VIDEO SELECT switch is pressed it changes.
Ⓛ Displays the component selected by the VCR 1 RECORDING SELECTOR (A component that can record to VCR 1).
Ⓜ Lights when the VCR NOISE FILTER switch is ON.
Ⓝ Displays the selected DELAY TIME.

⑧ SURROUND MODE switches/indicators

Select the source to be used when employing the SURROUND function.

OFF:
To cancel the surround function.

STUDIO:
Enjoy the atmosphere of listening to music in a recording studio.

STADIUM:
Ideal for sports broadcasts, etc.

SIMULATED SURROUND:
Gives concert-hall presence to monaural sound (AM, TV, etc.).

DOLBY PRO LOGIC SURROUND:
Select this setting when watching video tapes or video discs bearing the DOLBY SURROUND mark.

⑨ SOUND FIELD MEMORY switches (MEMORY, SELECT)

In the SOUND FIELD MEMORY:

- SURROUND MODE
- CENTER MODE (In the case of DOLBY PRO LOGIC SURROUND. In other cases the CENTER MONO OUT ON/OFF)
- FRONT balance
- CENTER volume level
- REAR balance
- DELAY TIME
- REAR volume level
- ACOUSTIC MEMORY

Up to five of these positions can be stored in memory. It is also possible to select positions previously stored in the memory ("P" is displayed)

[Contents of "P"]

- SURROUND MODE: DOLBY SURROUND
- CENTER MODE: NORMAL
- DELAY TIME: 20 ms
- FRONT, REAR balance: CENTER
- REAR, CENTER volume level: both − 14 dB
- ACOUSTIC: FLAT

HOW TO USE THE SOUND FIELD MEMORY

1. **Select ACOUSTIC MEMORY, SURROUND MODE, and adjust the DELAY TIME, balance and volume level.**
2. **Press the MEMORY switch.**
3. **While the indicator is flashing, use the SELECT switch to select the position (A — E) to be memorized.**
   - A position is memorized when the SOUND FIELD MEMORY indicator stops flashing and lights. If the position to be memorized (A — E) is not selected while the indicator is flashing, it will not be memorized.
   - TONE settings not stored in ACOUSTIC MEMORY will not be memorized.
   - One of the five possible positions has now been stored in memory. The four remaining positions can be stored in memory using the same procedure.
   - When recalling the contents of the memory, select the memorized position with the SELECT switch.
   - In "P" nothing can be memorized.

⑩ CENTER LEVEL switches

For adjustment of the center level when the SURROUND MODE is in the DOLBY PRO LOGIC SURROUND or when the CENTER MONO OUT is ON.

Press + to raise the volume, − to lower. If + and − are pressed at the same time, you will return to the initial volume level (− 14 dB).

⑪ REAR LEVEL switches

When in the SURROUND MODE, these adjust the rear level.

Press + to raise the volume, − to lower. Press + and − at the same time to return to the initial volume level (− 14 dB). This can't be performed when the SURROUND MODE is OFF.

⑫ MUTING switch/indicator

Press to temporarily cut off the sound volume. The indicator will flash. When pressed again, the sound will return to its previous level.

⑬ MASTER VOLUME control

Adjusts the volume level.

The front, rear, and center levels change at the same time.

⑭ CENTER MODE switch

Selects the DOLBY PRO LOGIC SURROUND CENTER MODE (OFF, NORMAL, WIDE, PHANTOM) setting. This can only be performed when the DOLBY PRO LOGIC SURROUND is ON.

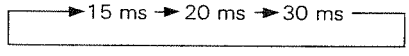
⑮ TEST TONE switch

This only operates when DOLBY PRO LOGIC SURROUND is used. This switches the TEST TONE output ON/OFF to adjust the SURROUND BALANCE of the DOLBY PRO LOGIC SURROUND.

In the ON position the TEST TONE passes from the front left → center → front right → rear (L, R) in that order, and can be heard for approximately 2 seconds from each speaker.

⑯ DELAY TIME switch

Switches the surround delay time in three steps.



This does not operate when the SURROUND MODE is OFF or when STUDIO is used.

⑰ BALANCE switches

Use to adjust the sound volume balance between left and right speakers.

L: Press to decrease the sound on the right side.

R: Press to decrease the sound on the left side.

Press L and R together to bring the volume balance back to center.

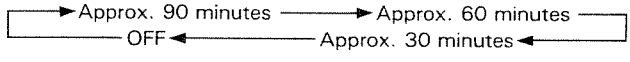
In the surround mode, these affect the front and rear speaker volume at the same time.

⑱ PHONES jack

Connect the plug on your headphones to this jack. To listen to a program through the headphones, set all SPEAKERS switches to the OFF position.

⑲ SLEEP switch

Sets the sleep timer. Each time you press this key, the setting changes as shown here.



⑳ CENTER MONO OUT switch

This switches monaural (L + R) center speaker output on and off. (This switch cannot be used with DOLBY PRO LOGIC SURROUND)

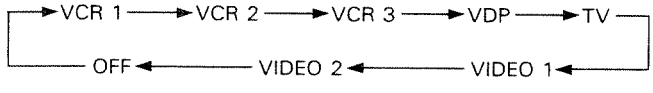
NOTE:

Tone control doesn't operate with CENTER MONO OUT.

㉑ VIDEO SELECT switch

Press this to switch VIDEO OUT (TO MONITOR TV) and VCR OUT in the following sequence: (Audio doesn't change)

The recording selector has priority for VCR 1 video recording.



The display indicator lights to show the selected item.

㉒ REC SEL SOURCE switch

The VCR 1 REC SELECT indicator goes out when this switch is turned on. The picture and sound to be recorded by VCR 1 is selected by the input selector.

㉓ VCR NOISE FILTER switch

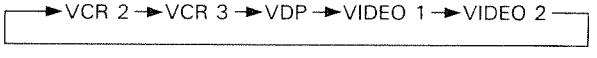
The noise filter only removes noise from the sound.
If tape hiss is noticeable while performing playback of video cassette tapes, press this switch to reduce the noise. The display section VCR NOISE FILTER indicator will light.

NOTE:

- *This switch can be used when either VCR 1 or VCR 2 function switches is selected.*
- *The effectiveness in reducing high-frequency hiss noise varies depending on the type of tape used, the recording level, and other conditions.*

㉔ VCR 1 REC SEL switch/indicator

Press this switch to change the source from which the VCR1 will record in the following order.



The display indicator lights to show this.
If you set the REC SEL SOURCE switch to ON then the VCR 1 REC SEL indicator will go out. Picture and sound can then be recorded from the source selected by the video input selector.

㉕ VCR 1 MODE switch

Set this switch ON, when using a VCR with monaural audio output. For both monaural input and output turn this switch on. It functions when the VCR 1 inputs are selected. The display section MONO indicator will light.

㉖ SIMULATED STEREO switch

Press to produce a simulated stereo effect when listening to monaural sources (for example AM or TV broadcasts). The indicator will light.

NOTE:
This effect is not produced through the surround rear speakers.

㉗ Audio input selector switches/indicators

TAPE 1/DAT 1:
Press to listen to the sound from the cassette deck or DAT connected to the TAPE 1/DAT 1 jacks.
TAPE 2/DAT 2 MONITOR:
Press to listen to the sound from the cassette deck or DAT connected to the TAPE 2/DAT 2 jacks.
The TAPE 2/DAT 2 MONITOR is independent of other audio input selector switches and can be switched ON/OFF independently. In the ON position, the TAPE 2 indicator in the display section lights.
LINE:
Press to listen to the sound from the component connected to the LINE INPUT jacks.
CD:
Press to listen to the playback sound from the CD player connected to the CD jacks.
TUNER:
Press to listen to AM or FM broadcasts with the tuner connected to the TUNER jacks.
PHONO:
Press to listen to the sound from the turntable connected to the PHONO jacks.

NOTE:
When playing anything other than TAPE 2/DAT 2, set the TAPE 2/DAT 2 MONITOR switch to OFF (TAPE 2 indicator is out).

㉘ Video input selector switches

VCR 1:
Press this switch when playing back a tape in the video cassette recorder connected to the VCR 1 jacks.
VCR 2:
Press this switch when playing back a tape in the video cassette recorder connected to the VCR 2 jacks.
VCR 3:
Press this switch when playing back a tape in the video cassette recorder connected to the VCR 3 jacks.
VDP:
Press to watch a program from a video disc player connected to the VDP jacks.
TV:
Press to watch TV programs (reception with a TV tuner connected to the TV jacks).
VIDEO 1:
Press this when playing from equipment (satellite receiver, etc.) connected to VIDEO 1 jack.
VIDEO 2:
Press this when playing from equipment (video camera etc.) connected to VIDEO 2 INPUT jack on the front panel.

㉙ VIDEO ADAPTOR switch

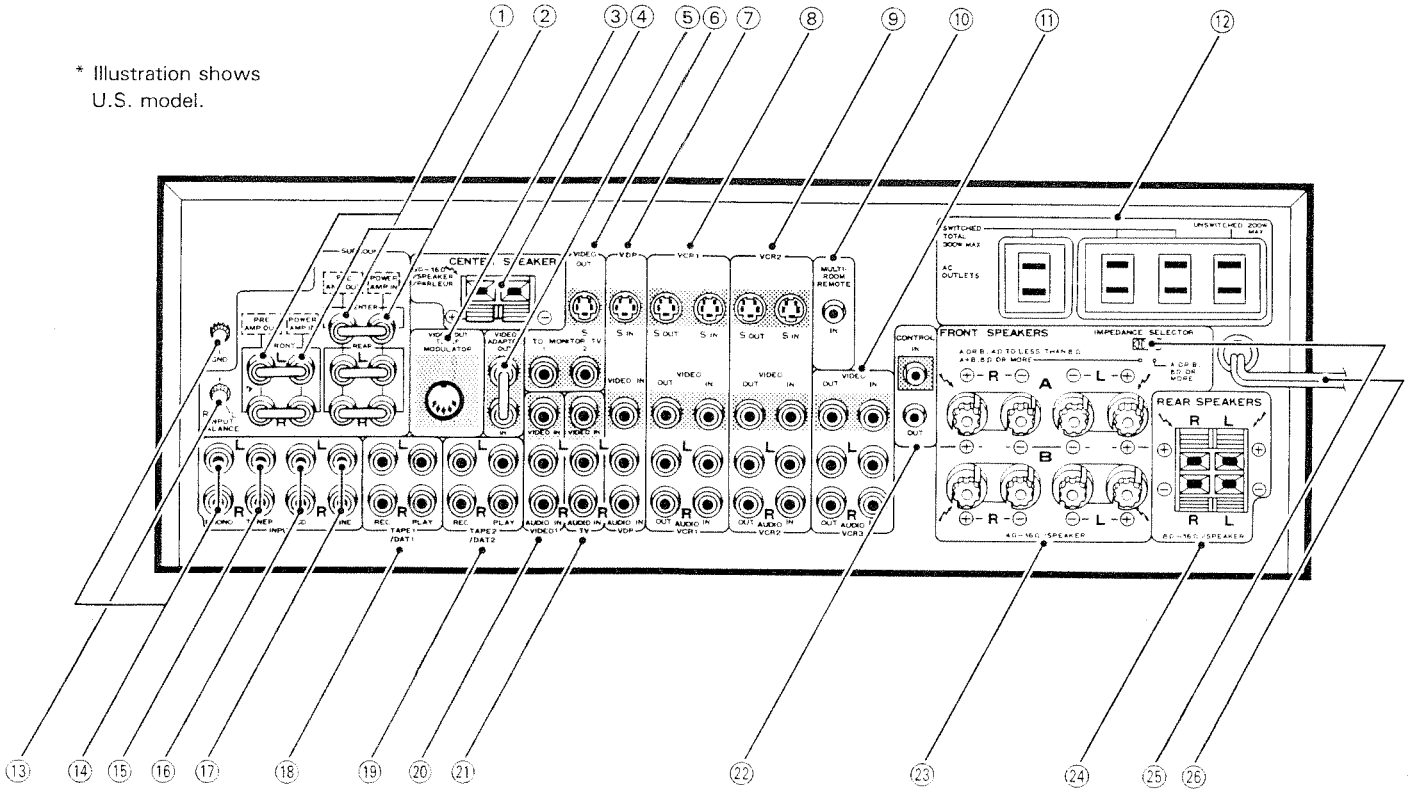
Press to obtain a video signal passed through an external video signal processor connected to the VIDEO ADAPTOR jacks.
Be sure to set to OFF when not using the VIDEO ADAPTOR jacks.
The video adaptor switch cannot be used with components connected by an S-VIDEO lights.

㉚ VIDEO 2 INPUT jacks

Video components such as a video camera can be connected here.

REAR PANEL FACILITIES

* Illustration shows U.S. model.



① PRE AMP OUT jacks

When using a power amplifier to boost the volume of front, rear or center speakers, connect here. Refer to page 16 for details concerning connection. Connect the power cord of the power amplifier to the AC OUTLETS (SWITCHED) of this unit.

NOTE:
Pay attention to the power consumption of the power amplifier used. For more details refer to ⑫ AC OUTLETS on page 11.

② POWER AMP IN jacks

When a preamplifier (optional) is used with the VSA-1000 power amplifier to drive the front, rear or center speakers, use these jacks. Refer to page 16 for details concerning connection.
First switch the preamplifier power ON, and then switch the VSA-1000 power ON.

NOTE:
When not using, be sure to connect the PRE AMP OUT and the POWER AMP IN with a connector bar.

③ VIDEO OUT TO RF MODULATOR jack

Use this when connecting a TV set that doesn't have a video input jack. When performing connections, the RF MODULATOR JA-RF5 (sold separately) is required. By connecting an RF modulator, video signal can be converted to VHF signal (U.S. channel 3 or 4), thus allowing this unit to be used to view the selected source on a TV set.

④ CENTER SPEAKER terminals

Use to connect a surround center channel speaker system.
Connect a speaker system having a nominal impedance ranging from 8Ω to 16Ω.

⑤ VIDEO ADAPTOR IN/OUT jacks

Use to connect a video adaptor component such as a video enhancer or color corrector.

⑥ VIDEO OUT jacks

Connect to a monitor TV video input jack.
If the monitor TV has an S-VIDEO input, and a VDP or VCR is connected to the VSA-1000 with an S-VIDEO connector, the S-VIDEO connector can also be used.
There are 2 sets of video output jacks so 2 monitors can be used at the same time if you wish.

⑦ VDP jacks

Connect here to the output jacks of a Videodisc player.
It is also possible to connect to the S-VIDEO connector if the VDP has an S-VIDEO output.

⑧ VCR 1 IN/OUT jacks

IN:
Connect to VCR output (video/audio) jacks.
OUT:
Connect to the VCR input (video/audio) jacks.

- If the VCR has S-VIDEO input/output connectors the S-VIDEO connectors can also be used.
- If the audio input/output of the VCR is monaural, connect to VCR 1 either of the L or R jacks and set the VCR 1 MODE switch to the MONO position.

⑨ VCR 2 IN/OUT jacks

Connect to the second VCR input/output jacks.

- If the VCR has S-VIDEO input/output connectors, it can also be connected to the S-VIDEO connectors.

⑩ MULTI-ROOM REMOTE jack

The optional MR-100 Multi-room remote control unit can be connected.

⑪ VCR 3 IN/OUT jacks

Connect to the third VCR input/output jacks.

⑫ AC OUTLETS

SWITCHED TOTAL 300 W MAX

Power supplied through these outlets is turned on and off by the amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 300 W.

UNSWITCHED 200 W MAX

Power flows continually to this outlet, regardless of whether the amplifier is switched ON or OFF. Electrical power consumption of the connected equipment should not exceed 200 W.
The equipment should be disconnected by removing the power plug from the wall socket when not in regular use, e.g. when on vacation.

NOTE:
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLETS in order to avoid overheating or fire risk.
This can cause the receiver to malfunction.

⑬ INPUT BALANCE control knob

Use to adjust the DOLBY PRO LOGIC SURROUND input balance.(See page 5)

NOTE:
Perform this adjustment to assure correct surround sound reproduction.

⑭ PHONO INPUT jacks/GND terminal

Connect here the output of a turntable. Connect the ground cable to the GND terminal.
Use a moving magnetic (MM) cartridge for the turntable.

⑮ TUNER INPUT jacks

Connect to the output jacks of a FM/AM tuner.

⑯ CD INPUT jacks

Connect to the output jacks of a compact disc player.

⑰ LINE INPUT jacks

Connect to the output jacks of an audio component.

⑱ TAPE 1/DAT 1 jacks

Connect a DAT (digital audio tape deck) or your primary analog cassette deck to these jacks.

Connecting for Recording

The tape recording jack (TAPE REC) on the cassette deck or DAT should be connected to the REC side of the TAPE 1/DAT 1 jack on the amplifier with a pin plug connecting cord.

Connecting for Playback

Connect the TAPE PLAY jack on the cassette deck or DAT to the PLAY side of the TAPE 1/DAT 1 jack on the amplifier with a pin plug connecting cord.

NOTE:
When using DAT, connect its analog input/output terminals.

⑲ TAPE 2/DAT 2 jacks

Connect to the input/output jacks of the second cassette deck or DAT.

⑳ VIDEO 1 jacks

Connect to the video and audio outputs of a video component.

㉑ TV jacks

Use these jacks if wish to connect a TV tuner having both video and audio outputs.

[VIDEO IN]

Connect the TV tuner's video output to this jack.

[AUDIO IN (L, R)]

Connect the TV tuner's audio output to these jacks.

㉒ CONTROL IN/OUT jacks

These terminals are for input/output of control signals when operating other components with the attached remote control unit (see page 17 for details).

㉓ FRONT SPEAKERS terminals

A: Connect to a first set of speakers.
B: Connect to a second set of speakers.
Please refer to item ㉕ Front speakers IMPEDANCE SELECTOR switch.

㉔ REAR SPEAKERS terminals

Connect the surround rear speakers to these terminals.

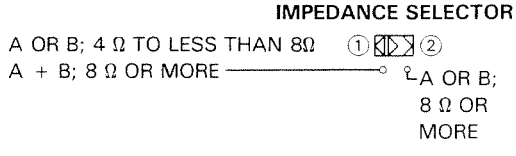
Speaker impedance

Connect speaker systems with a nominal impedance of between 8 Ω and 16 Ω.

NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.

㉕ IMPEDANCE SELECTOR switch

Set this switch to match the impedance of your front speakers.



• When using a pair of speakers:

Impedance of a speaker	Selector position
4 Ω to less than 8 Ω	①
8 Ω or more	②

• When using two pairs of speakers:

Select ① as the selector switch position and use speakers having impedance of 8 Ω or more.

NOTE:
Turn off the amplifier's power before changing the impedance selector switch setting.

㉖ Power cord

Connect this to the AC wall socket.

CONNECTIONS

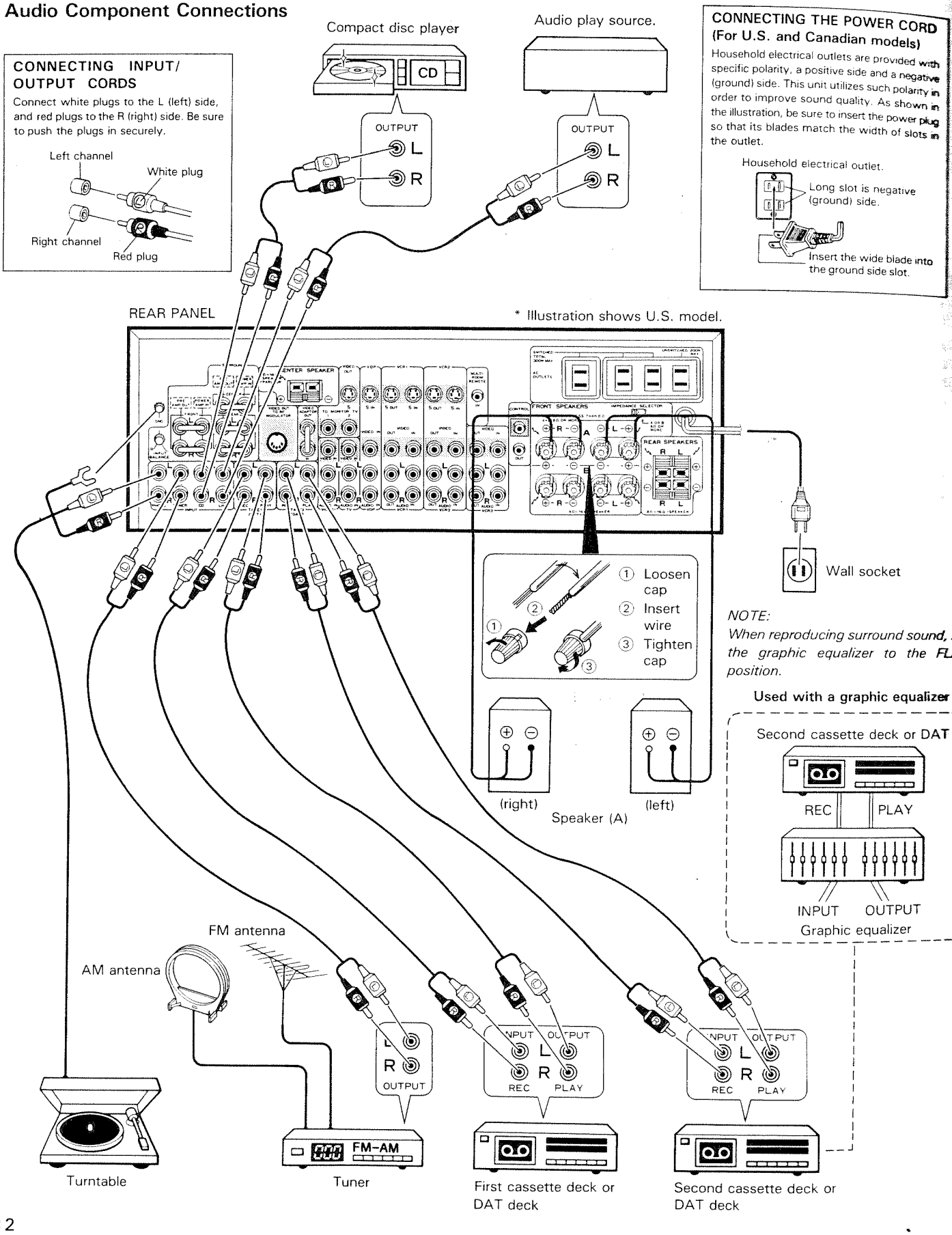
Audio Component Connections

CONNECTING INPUT/ OUTPUT CORDS

Connect white plugs to the L (left) side, and red plugs to the R (right) side. Be sure to push the plugs in securely.

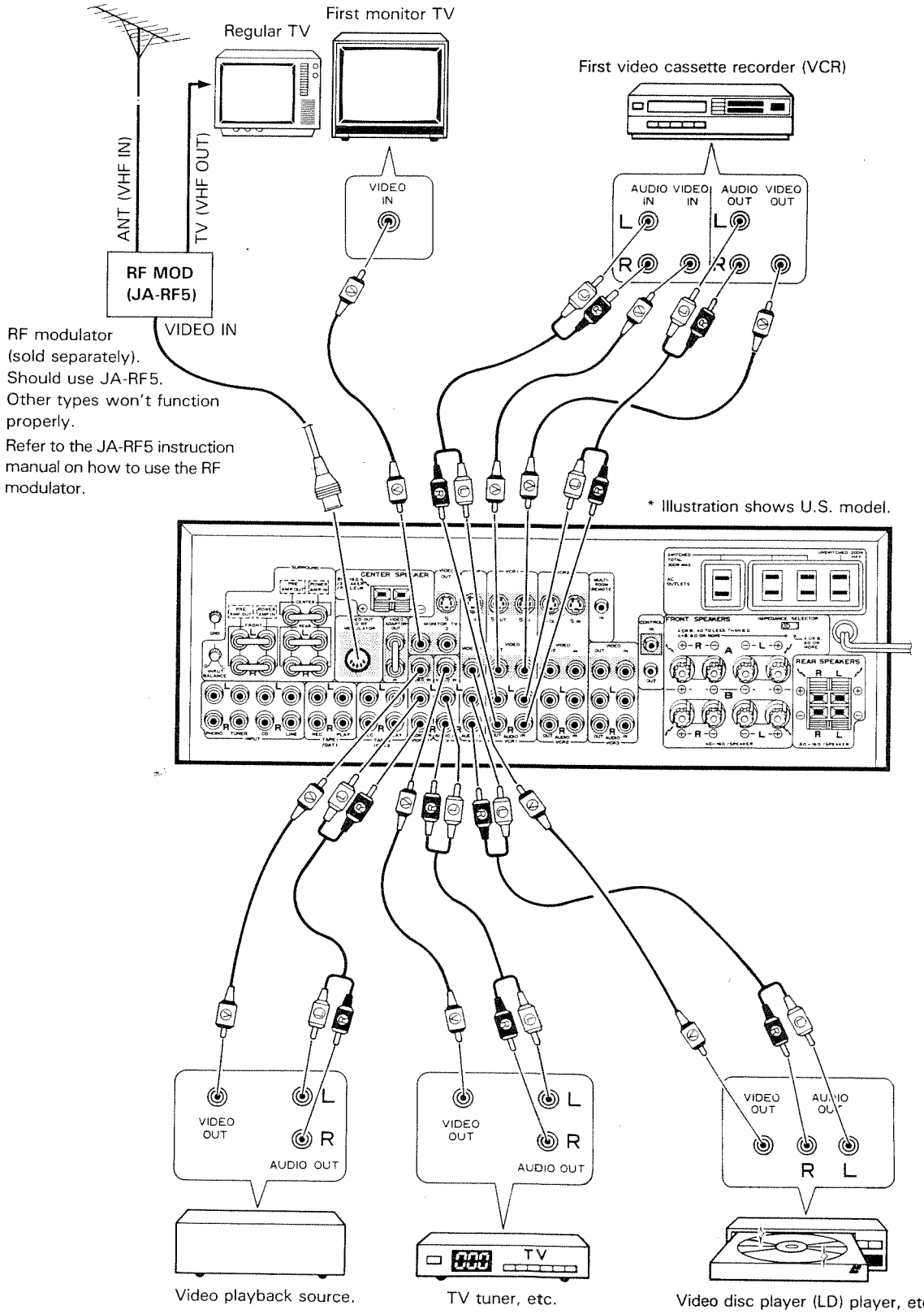
CONNECTING THE POWER CORD (For U.S. and Canadian models)

Household electrical outlets are provided with specific polarity, a positive side and a negative (ground) side. This unit utilizes such polarity in order to improve sound quality. As shown in the illustration, be sure to insert the power plug so that its blades match the width of slots in the outlet.



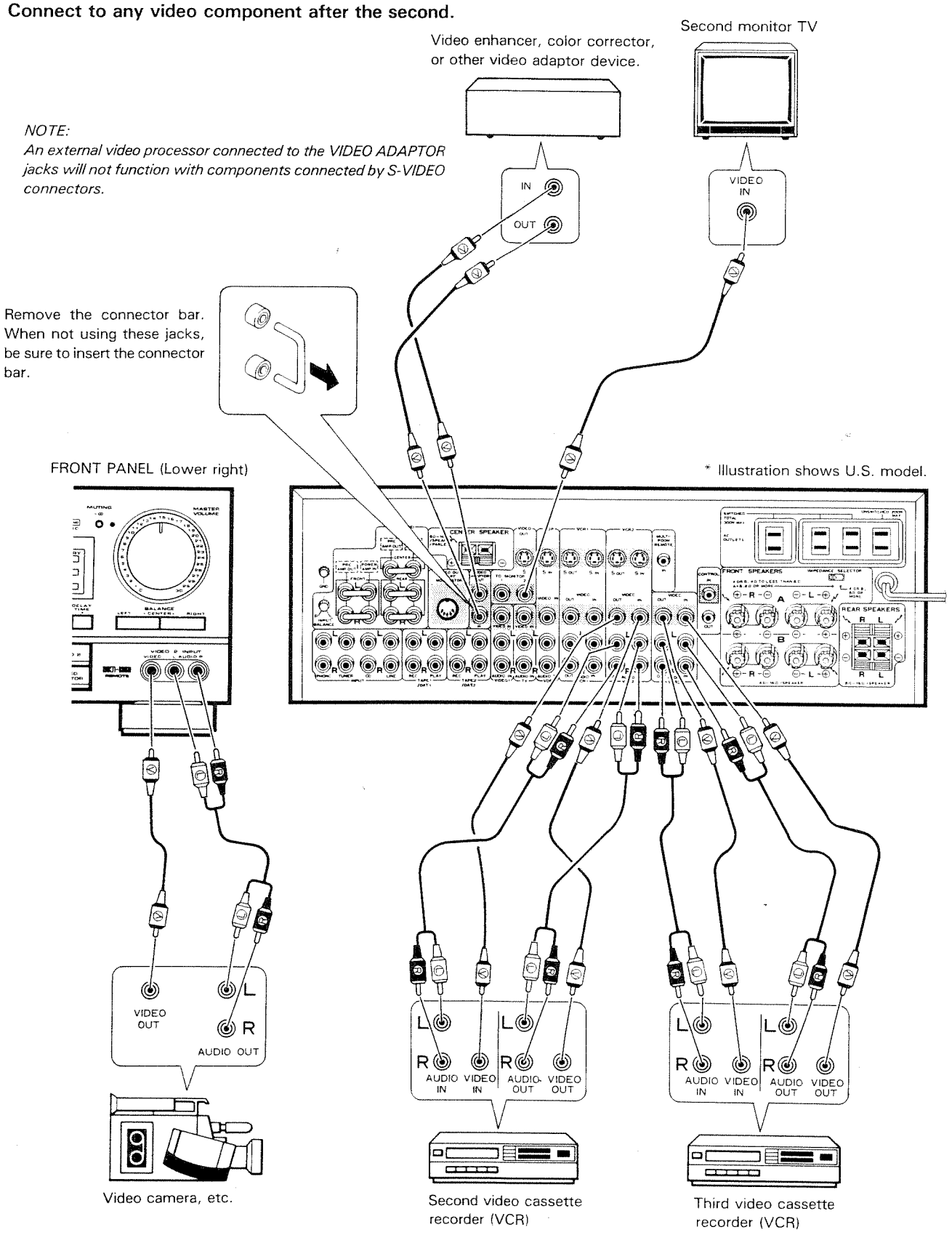
Video Component Connections

Connect to the first video component.



Video Component Connections

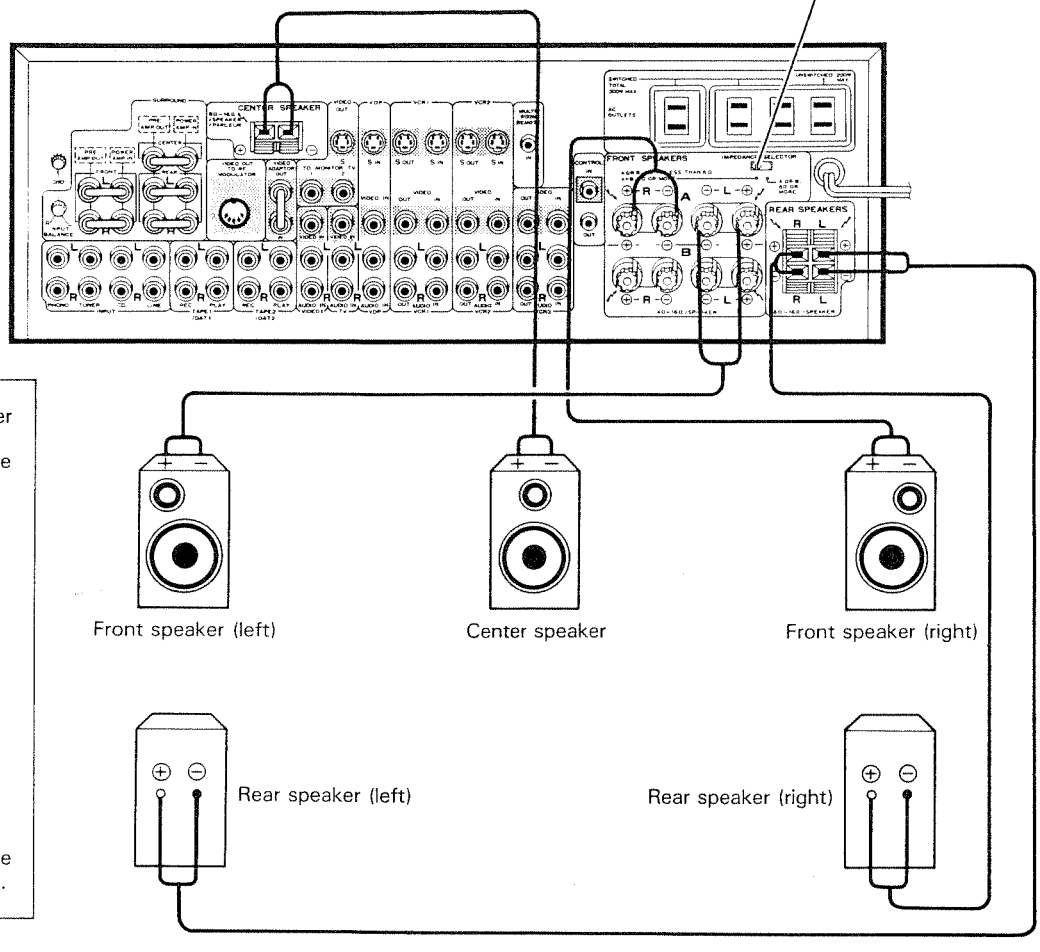
Connect to any video component after the second.


Second monitor TV
Video enhancer, color corrector, or other video adaptor device.
NOTE:
An external video processor connected to the VIDEO ADAPTOR jacks will not function with components connected by S-VIDEO connectors.
IN
OUT
VIDEO IN
Remove the connector bar. When not using these jacks, be sure to insert the connector bar.
FRONT PANEL (Lower right)
* Illustration shows U.S. model.
VIDEO OUT
L
R
AUDIO OUT
AUDIO IN
VIDEO IN
AUDIO OUT
VIDEO OUT
Video camera, etc.
Second video cassette recorder (VCR)
Third video cassette recorder (VCR)

Speakers Connections

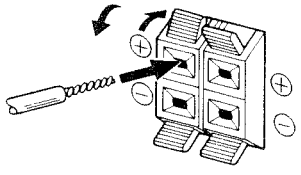
* Illustration shows U.S. model.

Set the IMPEDANCE SELECTOR switch (See page 11).



How to install the rear speaker cords.
Connect the center speaker in the same way.

10 mm



Insert the cords while pressing the levers and then release the levers.

THE S-VIDEO CONNECTORS

When using a VCR, LDP or monitor TV which has S-VIDEO connectors, they can be connected to the S-VIDEO connectors.
For the operation of components connected to S-VIDEO connectors, refer to the instruction manuals of each component.

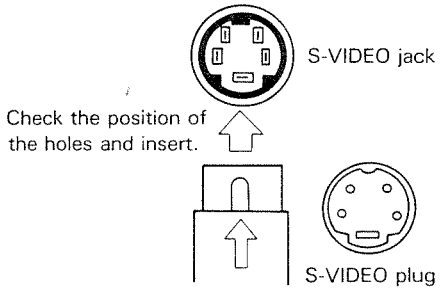
NOTE:

- *In this unit, the S-VIDEO connectors (Y-C separate) and the regular pin jacks are independent, so any signal input through a pin jack must be output from the pin jack, and any signal input through an S-VIDEO connector must be output through the S-VIDEO connector.*
- *The S-VIDEO connector is for video only, so be sure to make audio connections also.*

Precautions when connecting a monitor TV that automatically selects between S-VIDEO input and regular video input.
The following conditions may arise if both the S-VIDEO connector and regular video connector (pin jack) are connected to the same TV input facility.

- If the AMP/TV DISP key is pressed for indication display during playback from a component connected with a regular pin jack, the picture will disappear.
  This is because the indication display signal is also added to the S-VIDEO signal, causing the monitor to detect S-VIDEO input and therefore automatically select S-VIDEO as the source.
  In this case, connect the VSA-1000 VIDEO OUT (pin jack) to a different S-VIDEO input jack on the monitor TV and switch manually.

How to use S-VIDEO connectors.



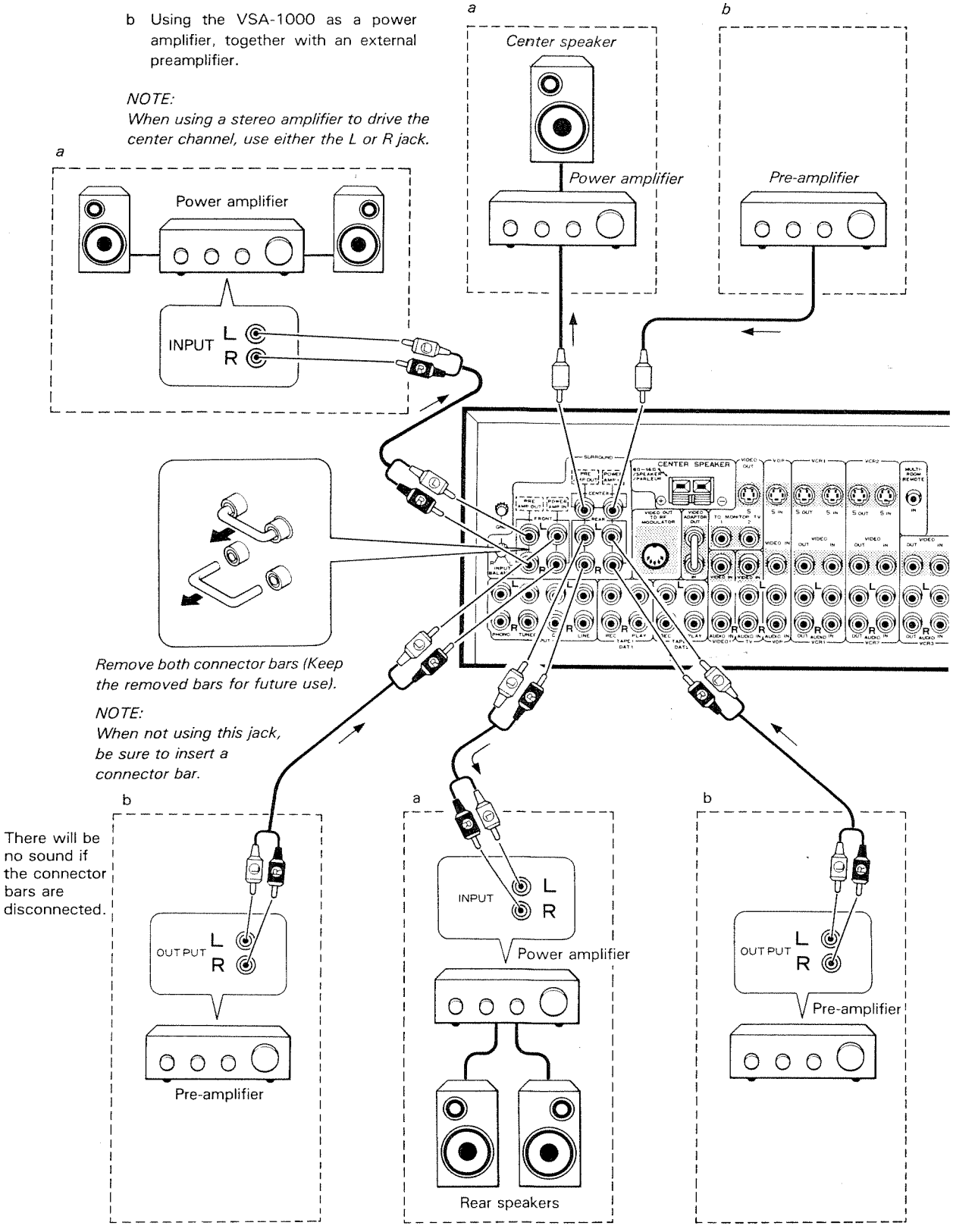
For the method of switching the monitor TV S-VIDEO connector/ VIDEO jack, refer to the monitor TV's instruction manual.

When Used with Another Amplifier

a Using the VSA-1000 as a preamplifier, together with another power amplifier.

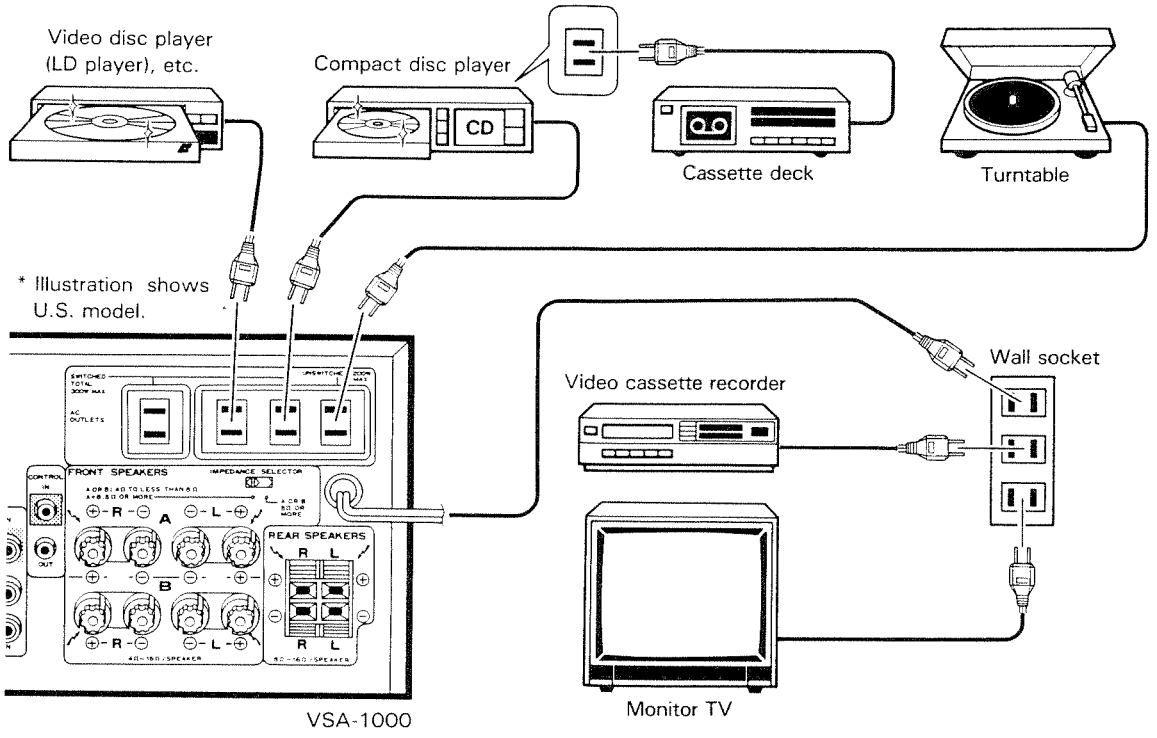
b Using the VSA-1000 as a power amplifier, together with an external preamplifier.

NOTE:
When using a stereo amplifier to drive the center channel, use either the L or R jack.



EXAMPLE OF POWER CORD CONNECTION

When using a timer with the VSA-1000, connect the VCR power cord directly to the wall socket.

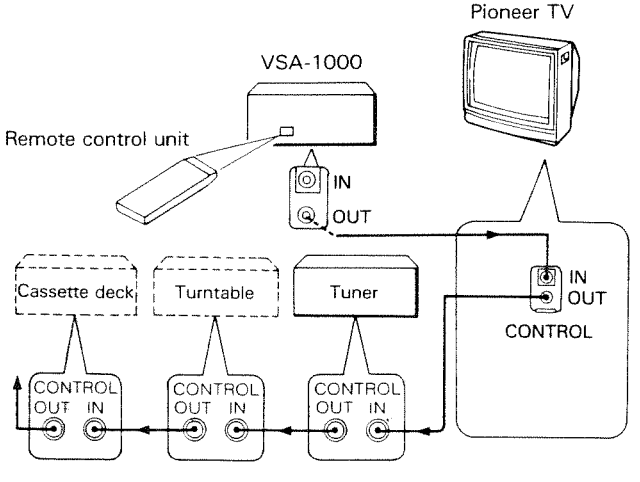


REMOTE CONTROL CORD CONNECTIONS

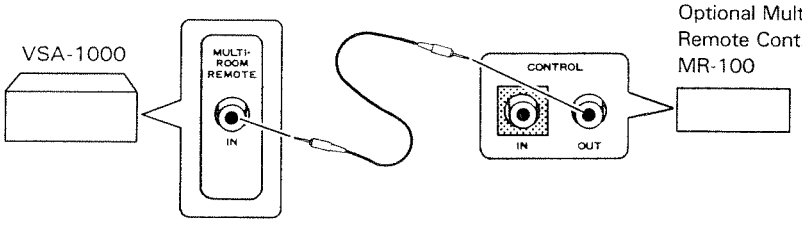
The connections shown below are performed when using the VSA-1000 remote sensor.

- By interconnecting the CONTROL jacks of Pioneer units with the SR mark, the entire system can be operated with this remote control unit, although some of the units (AM/FM tuner, turntable, cassette deck, etc.) may not be equipped with remote sensors. The entire system can be operated by a remote control unit connecting PIONEER stereo components to each other using the control input (CONTROL IN) jack on each component. Use the remote control cord supplied with the respective unit for the connection. An example is shown in the drawing. As long as you connect "OUT" to "IN," the connecting sequence is arbitrary. In the case of a unit which has only an "IN" connector, however, connect it last.

NOTE:
This unit's remote control reception window will not operate if a control cord is plugged into this unit's CONTROL IN jack.



CONNECTING THE MULTI-ROOM REMOTE IN JACK



- For details, see instruction manual for Multi-Room Remote Control Unit.

CAUTION:
Be careful not to make the wrong connections for CONTROL IN, OUT (black) and MULTI-ROOM REMOTE IN (green).

OPERATIONS

AUDIO SOURCE REPRODUCTION

1. **Press POWER switch to turn on power.**
2. **Use audio input selector to choose a listening source.**
   Turn off the TAPE 2/DAT 2 MONITOR before playing TAPE 1/DAT 1, LINE, CD, TUNER or PHONO sources (TAPE 2 indicator on the display goes off).

Select:

TAPE 1/DAT 1: To listen to cassette tape or DAT.
TAPE 2/DAT 2: To listen to cassette tape or DAT (from unit connected to TAPE 2/DAT 2 jacks).
LINE: To listen to the components connected to LINE jacks.
CD: To listen to compact discs.
TUNER: To listen to radio.
PHONO: To listen to records.

3. **Operate selected source component.**
   - Refer to component's own instruction manual.
4. **Adjust volume.**
   - If left/right volume balance is not correct, then use the BALANCE switches to adjust it. Press LEFT and RIGHT together to reset balance to center.
5. **Adjust tone.**
   - Use TREBLE and BASS switches to adjust tone as desired.
   - To use ACOUSTIC MEMORY, select with the SELECT switch. (Refer to page 7)
   - Use SURROUND switches to select desired surround mode. If the source is monophonic (ordinary TV or AM radio), then select SIMULATED SURROUND.
     For the method of adjusting the DOLBY SURROUND level, refer to page 5.
   - Refer to page 8 when using SURROUND FIELD MEMORY.

VIDEO SOURCE REPRODUCTION

1. **Press POWER switch to turn on power.**
2. **Turn off VIDEO ADAPTOR switch if the VIDEO ADAPTOR jacks are not connected to anything.**
   The VIDEO ADAPTOR indicator on the display goes off.
   Switch OFF the TAPE 2/DAT 2 MONITOR.
3. **Use video input selector to choose a video source.**

Select:

VCR 1: To watch video from unit connected to VCR 1 jacks.
VCR 2: To watch video from unit connected to VCR 2 jacks.
VCR 3: To watch video from unit connected to VCR 3 jacks.
VDP: To view a video disc player.
TV: Use the TV TUNER when watching a TV program.
VIDEO 1: To use a video device connected to the VIDEO 1 jacks.
VIDEO 2: To use a video device connected to the VIDEO 2 jacks.

4. **Turn on monitor TV power.**
   - To use S-Video connector, be sure to set switch correctly on monitor TV, as necessary (as described in monitor TV instruction manual).
     The monitor TV S-VIDEO connector can be used to view playback when the VSA-1000 is connected to a VDP, VCR 1, or VCR 2 by the S-VIDEO connectors.
5. **Operate your selected video component.**
   - Refer to component's instruction manual.
6. **Adjust volume balance.**
   - Adjust balance as desired.
7. **Adjust tone.**
   - Adjust treble, bass, and select surround mode as desired.

Using a Video Adaptor

Turn on the VIDEO ADAPTOR switch to use a color corrector or enhancer or other device connected to the rear panel VIDEO ADAPTOR jacks.

NOTE:
When nothing is connected to the VIDEO ADAPTOR jacks and the VIDEO ADAPTOR switch is set to ON, nothing will be output from the video output (TO MONITOR TV) jacks.
A component connected to the VIDEO ADAPTOR jacks cannot be used with components connected with an S-VIDEO connector.

RECORDING ON AUDIO TAPE

Use INPUT selector to choose source to record.

1. **Press POWER switch to turn on.**
2. **Use the audio input selector or video input selector to choose the source that you wish to record.**
3. **Operate the selected source component.**
4. **Put cassette in cassette deck to be used for recording. Begin recording.**
   - Refer to deck's instruction manual.

Adjust amplifier volume and tone if you are listening while recording. (Refer to section on listening to audio sources.)
The recording is not affected by the settings of the VOLUME, BALANCE, TREBLE, or BASS controls.

COPYING AUDIO TAPES

You can copy from TAPE 1/DAT 1 to TAPE 2/DAT 2 MONITOR.

1. **Press POWER switch to turn on.**
2. **Turn on power of deck connected to TAPE 1/DAT 1 jacks and load recorded cassette.**
3. **Turn on power of deck connected to TAPE 2/DAT 2 jacks and load cassette for recording.**
4. **Use audio input selector to select TAPE 1/DAT 1.**
5. **Begin play of TAPE 1/DAT 1 deck. Begin recording on TAPE 2/DAT 2 deck.**
   - If the TAPE 2/DAT 2 jack cassette deck is a three head tape deck, you can listen to the recorded sound by selecting the TAPE 2/DAT 2 MONITOR with the audio input selector.

NOTE:
When the power is OFF the input selector does not function. If you wish to record on a tape or VCR, be sure the power is ON.

RECORDING ON VIDEO TAPE

Recording to VCR 2, VCR 3

You can use VCR 2 or VCR 3 to record the source selected by the VIDEO INPUT SELECTOR.

1. **Press the POWER switch to turn on.**
2. **Use the video input selector to choose the source you wish to record.**
3. **Operate the selected source.**
4. **Put a cassette in the VCR 2 (or 3) to be used for recording and begin recording.**
   - Refer to the VCR instruction manual.

NOTE:
When the power is OFF the input selector does not function. If you wish to record on a tape or VCR, be sure the power is ON.

S-VIDEO CONNECTORS

- S-VIDEO input/output connectors and input/output pin jacks are independent circuits and consequently function independently.
- S-VIDEO inputs and pin jack inputs are linked to the same selectors, so although a source without S-VIDEO input connectors (VCR 3, VIDEO 1, 2, TV) may be selected by the video input selector, no signal will be output through the S-VIDEO VIDEO OUT (TO MONITOR TV) connector.
- If VCR 1, VCR 2, or VDP selected by the video input selector are connected by both S-VIDEO connectors and pin jacks, signals will be output through the VIDEO OUT (TO MONITOR) jacks through both the S-VIDEO connector and the pin jack. The signal finally used is selected by the connected TV monitor.

RECORDING TO VCR 1

• When using the RECORDING SELECTOR

Regardless of the setting of the input selector, the audio or video source selected by the RECORDING SELECTOR can be recorded.

1. **Press the POWER switch to turn on.**
2. **Use the VCR 1 REC SEL switch to choose the source you wish to record.**
   - The selected source is indicated by ( ) on the display.
3. **Operate the selected source.**
4. **Put a cassette in the VCR 1 to be used for recording and begin recording.**
   A video adaptor can't be used.

• When the RECORDING SELECTOR is not used

1. **Press the POWER switch to turn on.**
2. **Press the REC SEL SOURCE switch and the REC SEL indicator goes off.**
   Select the source with the video input selector.
3. **Operate the selected source.**
4. **Put a cassette in the VCR 1 to be used for recording and begin recording.**
   A video adaptor can be used.

COPYING A VIDEO TAPE

If you don't use the VCR 1 REC SEL, a video adaptor can be used. When copying to VCR 1 using VCR 1 REC SEL, a video adaptor can't be used. You can perform 3-way copying between VCR 1, VCR 2 and VCR 3. (Simultaneous copying from VCR 1 to VCR 2 and VCR 3, etc., is also possible.)

• When copying from VCR 1 or VCR 2 to VCR 3

1. **Press the POWER switch to turn the power on.**
2. **Load VCR 1 or VCR 2 with the pre-recorded cassette.**
3. **Load VCR 3 with the cassette for recording.**
4. **Select the VCR loaded with the pre-recorded cassette with the video input selector.**
5. **Play the pre-recorded cassette and record with VCR 3.**
   Select the line input for VCR 3.

• When copying from VCR 1 or VCR 3 to VCR 2

1. **Press the POWER switch to turn the power on.**
2. **Load VCR 1 or VCR 3 with the pre-recorded cassette.**
3. **Load VCR 2 with the cassette for recording.**
4. **Select the VCR loaded with the pre-recorded cassette with the video input selector.**
5. **Play the pre-recorded cassette and record with VCR 2.**
   Select the line input for VCR 2.

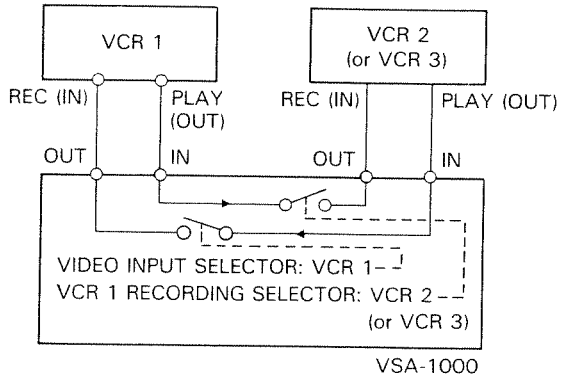
• When copying from VCR 2 or VCR 3 to VCR 1

1. **Press the POWER switch to turn the power on.**
2. **Load VCR 2 or VCR 3 with the pre-recorded cassette.**
3. **Load VCR 1 with the cassette for recording.**
4. **(When using the VCR 1 REC SEL switch)**
   Select the VCR loaded with the pre-recoded cassette with the VCR 1 REC SEL switch.
   (When not using the VCR 1 REC SEL switch)
   Press the REC SEL SOURCE switch, and after the indicator has gone off, select the VCR loaded with the pre-recorded cassette with the video input selector.
5. **Play the pre-recorded cassette and record with VCR 1.**

THE VIDEO SELECTOR

Using the VIDEO SELECT switch you can change the video source without changing the audio source. You can listen to the VDP while watching the VCR picture.
You can also record on VCR 1 the picture from VIDEO 2 together with the sound from a CD.
The selected VIDEO SIGNAL is indicated by the ( ) light on the display.
The VCR 1 REC SEL switch gives priority to recording on VCR 1.

NOTE:
When you have selected VCR 1 with the video input selector, and VCR 2 (or VCR 3) with the VCR 1 REC SEL switch, to prevent oscillation from a loop, no signal is output from the VCR 2 (or VCR 3) OUT jack. When recording from VCR 1 to VCR 2 (or VCR 3), don't select VCR 2 (or VCR 3) with the VCR 1 REC SEL switch.



VSA-1000

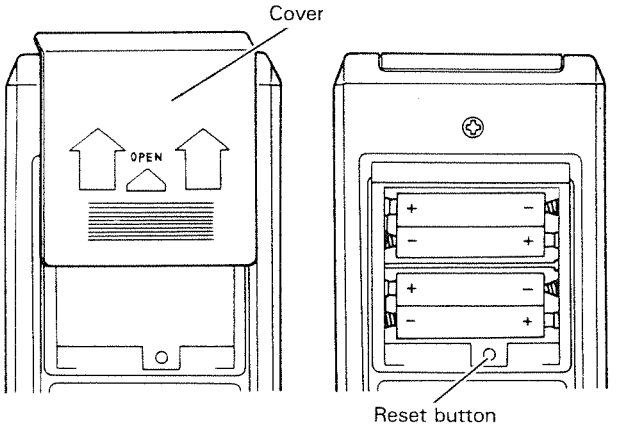
LAST MEMORY FUNCTION

- Current status is retained in memory when this unit is turned off. So it returns to your previous settings when you turn it on again.

REMOTE CONTROL OPERATION

LOADING BATTERIES

1. **Open the battery compartment cover on the rear of the remote control unit. The cover should open easily if you slide it in the direction of the arrow while pressing on it with your thumb.**
2. **Take out the four supplied alkali (LR03/AM-4) batteries, and insert them into the battery compartment in accordance with the indications in the compartment.**
3. **Close the cover of the battery compartment.**



Incorrect use of batteries may lead to leakage or rupture. Always be sure to follow these guidelines:

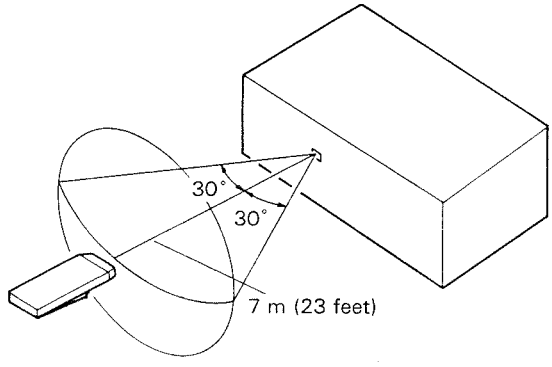
A.
Always insert batteries into the battery compartment correctly matching the positive + and negative − polarities, as indicated inside the compartment.

B.
Never mix new and used batteries.

C.
Batteries of the same size may have different voltages, depending on their type. Do not mix different type of batteries.

RANGE OF REMOTE CONTROL

When operating the remote control unit, point the front of the unit at the front panel of the VSA-1000. The remote control unit may be used within a range of about 7 meters (23 feet) from the remote sensor, within angles of up to about 30 degrees.



Battery Replacement

When the batteries have run out, the transmit indicator will not illuminate even when a key is pressed. Be sure to replace the batteries as soon as possible. As the programmed functions will be retained in memory only as long as batteries are inserted, remove the old batteries only if they can be replaced by new ones immediately.
Also, be sure to always use the specified batteries (LR03/AM-4 alkaline batteries).

NOTE:
When no batteries are inserted, the programmed memory contents will be erased after approx. 15 minutes.

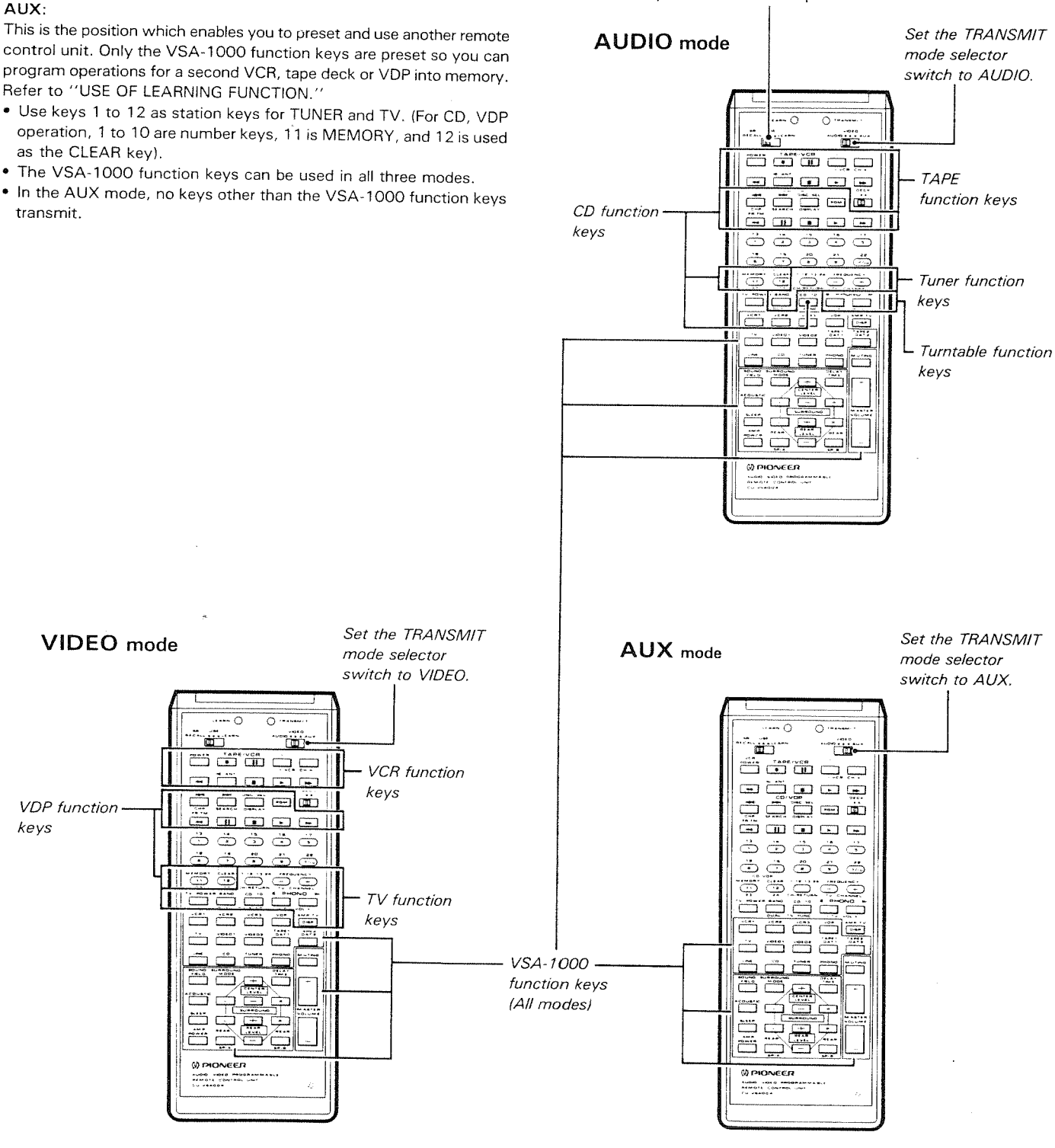
FUNCTION OF THE TRANSMIT MODE SELECTOR SWITCH

AUDIO:
Select this position for remote control operation of audio equipment such as a CD player, turntable, tape deck or tuner.
VIDEO:
Select this position for remote control operation of video equipment such as Video disc player (LD player), VCR or TV.
AUX:
This is the position which enables you to preset and use another remote control unit. Only the VSA-1000 function keys are preset so you can program operations for a second VCR, tape deck or VDP into memory. Refer to "USE OF LEARNING FUNCTION."

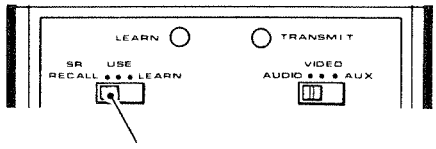
- Use keys 1 to 12 as station keys for TUNER and TV. (For CD, VDP operation, 1 to 10 are number keys, 11 is MEMORY, and 12 is used as the CLEAR key).
- The VSA-1000 function keys can be used in all three modes.
- In the AUX mode, no keys other than the VSA-1000 function keys transmit.

LEARN selector switch

Set as follows:
LEARN:
This position is used for storing the codes of your remote control unit.
USE:
Set to this position after codes have been stored in the LEARN position.
SR RECALL:
Set to this position for normal operation.


AUDIO mode
Set the TRANSMIT mode selector switch to AUDIO.
TAPE function keys
CD function keys
Tuner function keys
Turntable function keys
VIDEO mode
Set the TRANSMIT mode selector switch to VIDEO.
VCR function keys
VDP function keys
TV function keys
VSA-1000 function keys (All modes)
AUX mode
Set the TRANSMIT mode selector switch to AUX.

VSA-1000 OPERATION

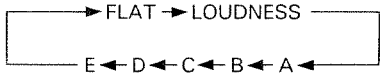


Set the LEARN selector switch to SR RECALL.

SURROUND AMPLIFIER function keys: (Operation of this unit)

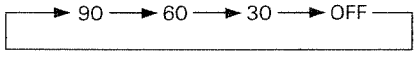
INPUT SELECTOR keys:
Press VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, TAPE 1/DAT 1, TAPE 2/DAT 2, LINE, CD, TUNER or PHONO to switch the amplifier input.

ACOUSTIC select key:
The acoustic setting changes in the following manner each time this key is pressed.



MUTING key:
Used to temporarily mute the sound.
The volume is restored when pressed again.

SLEEP timer key:
Activates the SLEEP timer. The length changes in the following manner each time the key is pressed:

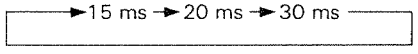


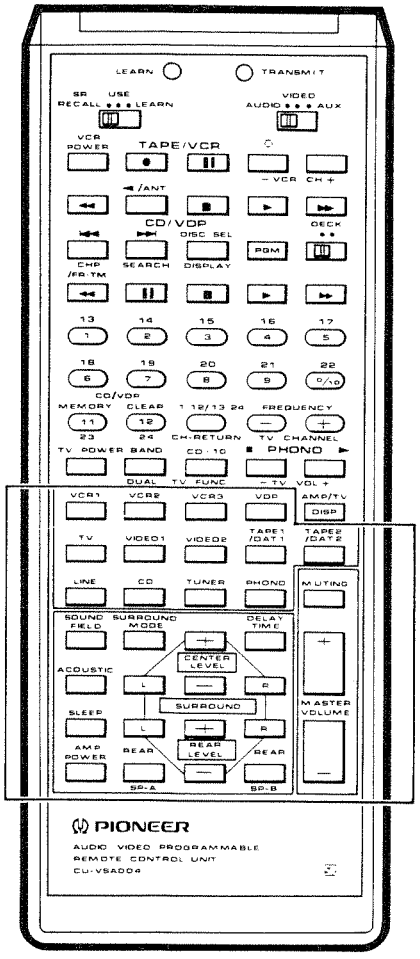
Unit: minutes

When the set time has elapsed, power to the unit is cut off.

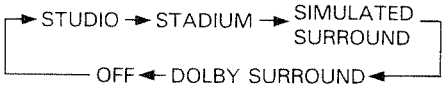
AMP POWER key:
Switches the amplifier power ON/OFF.

DELAY TIME key:
Switches the delay time for surround each time it is pressed.



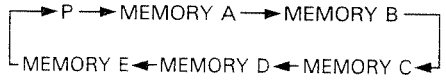


SURROUND MODE key:
The surround mode is switched in the following manner each time the key is pressed:



MASTER VOLUME key:
Adjusts the overall (front and surround) volume.

SOUND FIELD key:
By pressing the key, the SOUND FIELD MEMORY setting changes in the following way.



SP-A keys:
Switches the speakers A ON/OFF.

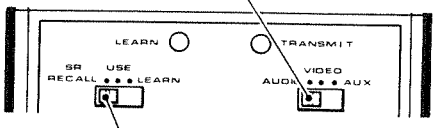
SP-B keys:
Switches the speakers B ON/OFF.

SURROUND keys:
The surround area can be set as desired by pressing these eight keys.
Adjust the rear and center volume with the +, – keys.
Adjust the front and rear left and right balance with the L and R keys.

AMP/TV DISP key:
Press this for TV display all of the main VSA-1000 functions in operation.
Press this key again or any other key and this display goes off.

CD PLAYER OPERATION

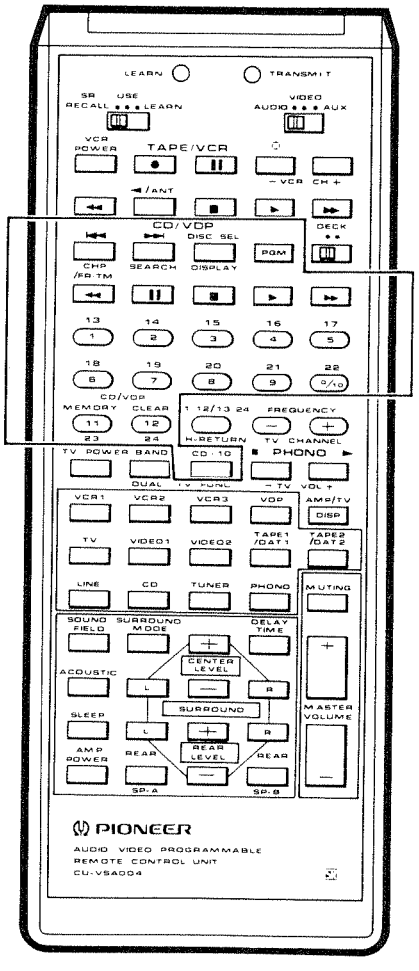
Set the TRANSMIT mode selector switch to AUDIO.



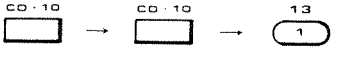
Set the LEARN selector switch to SR RECALL.

CD Function Keys (Operation of CD player)

|◄◄ (TRACK SEARCH) key:
Returns to the beginning of the playing track.
►►| (TRACK SEARCH) key:
Advances to the next track.
DISC SEL key:
Selects the DISC No. (1 to 6) for Multi-play compact disc players.
PGM key:
Press to program the CD player.
◄◄ (MANUAL SEARCH) key:
Selects fast backward.
II (PAUSE) key:
Pauses playback.
■ (STOP) key:
Stops playback.
► (PLAY) key:
Playback.
►► (MANUAL SEARCH) key:
Selects fast forward.



1 — 0/10 (numeric) keys:
If the PGM key is pressed first, the keys function as track number keys for a CD.
For direct selection of a track or programming of tracks.
MEMORY key:
Memorizes a program.
CLEAR key:
Erases a memorized program.
CD + 10 key:
Use this key when selecting more than 10 tracks. This key adds to the track number each time it is pressed.
Example: Track 21



NOTE:
You may not be able to use this key with certain CD players.

Note on CD operation
The program input and direct music selection procedures differ slightly from those of the remote control unit supplied with Pioneer CD players.
Before pressing the first number keys press the PGM key. Pressing the PGM key enables it to be used as the CD number key.

Programmed playback operation using the CD player remote control unit
(1: Disc No. 1 — 6 key) → 2: Track No. 1 — 0 key → 3: MEMORY key → 4: Repeat steps 1 to 3 → 5: PLAY key

Programmed playback operation using the programmable remote control unit
1: PGM key → (2: DISC SEL key) → 3: 0/10 ~ 9, CD · 10 key → 4: MEMORY 11 (23) key → 5: Repeat steps 2 to 4 → 6: ► key

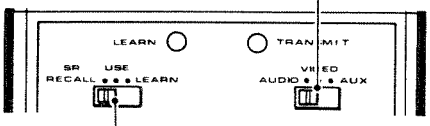
Direct music selection using the CD player remote control unit
(1: Disc No. 1 — 6 key) → 2: Track No. 1 — 0 key → 3: PLAY key)

Direct music selection using the programmable remote control unit
(1: DISC SEL key) → 2: PGM key → 3: 0/10 ~ 9, CD · 10 → 4: ► key
As above, the PGM CD operation key must be pressed before entering a number.

NOTE:
There are differences in operation depending on the type of CD player.

TAPE DECK OPERATION

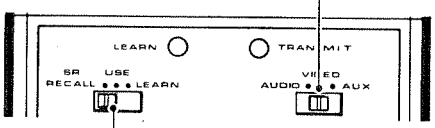
Set the TRANSMIT mode selector switch to AUDIO.



Set the LEARN selector switch to SR RECALL.

VCR OPERATION:

Set the TRANSMIT mode selector switch to VIDEO.



Set the LEARN selector switch to SR RECALL.

TAPE function keys (operation of cassette tape deck)

DECK I/DECK II selector switch:
When using a double cassette deck, use this to select the deck to be used.

O (REC MUTE) key:
For insertion of unrecorded spaces between selections.

● (REC) key:
Selects the recording mode.

II (PAUSE) key:
Temporarily stops the tape transport. Press again to resume tape transport.

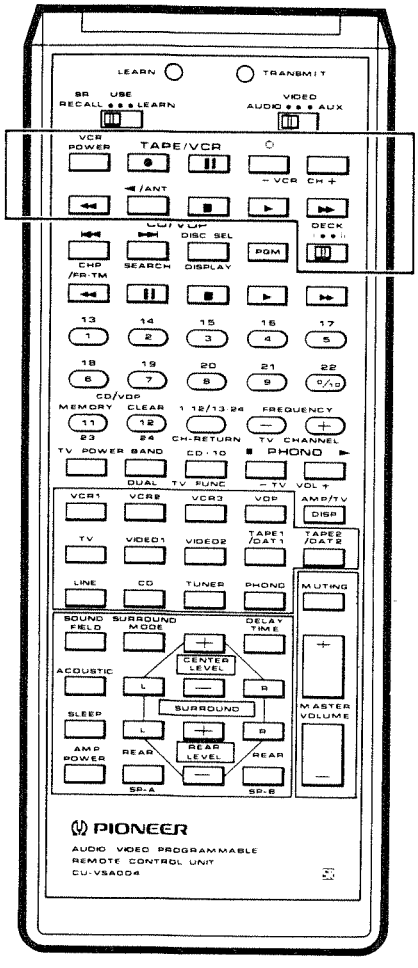
◄◄ (FF) key:
Fast forwards the tape in the direction of the arrow.

◄ (PLAY) key:
Selects reverse playback.

■ (STOP) key:
Stops the tape transport.

► (PLAY) key:
Selects forward playback.

►► (FF) key:
Fast forwards the tape in the direction of the arrow.



VCR function keys (operation of VCR)

VCR POWER key:
Switches the VCR power ON/OFF.

● (REC) key:
Selects the recording mode.

II (PAUSE/STILL) key:
Sets pause and still picture.

VCR CH + (UP) key:
Shifts channels in numerical order.

VCR CH – (DOWN) key:
Shifts channels in reverse order.

◄◄ (REW) key:
Rewinds the tape and allows picture search.

◄ ANT key:
This key can be used only for VCR with an ANT selector.
Switches the antenna output VCR to TV.

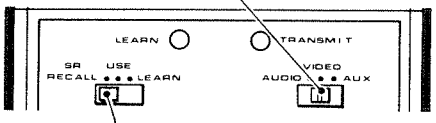
■ (STOP) key:
Stops tape transport.

► (PLAY) key:
Selects playback.

►► (FF) key:
Fast forwards the tape and allows picture search.

VDP OPERATION

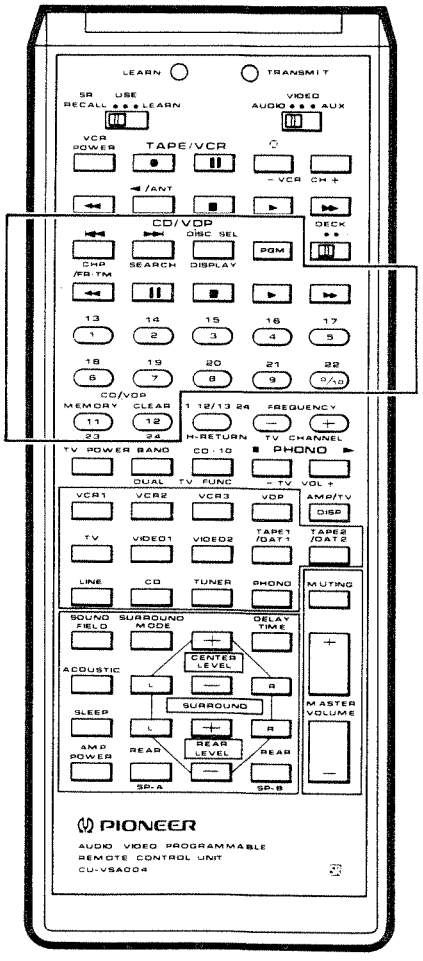
Set the TRANSMIT mode selector switch to VIDEO.



Set the LEARN selector switch to SR RECALL.

VDP function keys (operation of LaserVision player)

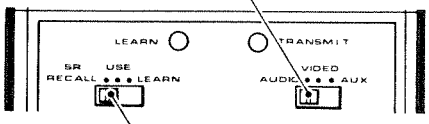
DISPLAY call key:
Clears and displays the chapter and frame/time displays on the screen.
PGM (PROGRAM) key:
Allows use of chapter program play, frame search and time search.
◄◄ (SCAN) key:
Selects fast backward.
II (PAUSE) key:
Video and audio are stopped and playback is paused.
■ (EJECT) key:
Playback is stopped when pressed once. Pressing again causes the disc tray to come out to the prescribed location.
► (PLAY) key:
Selects playback.
►► (SCAN) key:
Selects fast forward.



1 — 0/10 (DIGIT) keys:
Used for chapter and frame/time number search and for chapter program play.
MEMORY key:
Used for chapter program play.
CLEAR key:
Used for releasing repeat playback, number correction and mode release during search operation, and for releasing chapter program play.
CHP/FR-TM (CHAPTER/FRAME TIME) key:
Used for chapter or frame (time) search operation.
SEARCH key:
Used for the search operation and for the memory repeat operation.

TUNER AND TURNTABLE OPERATION

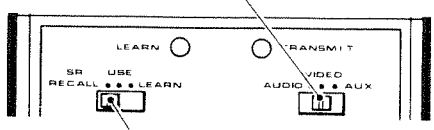
Set the TRANSMIT mode selector switch to AUDIO.



Set the LEARN selector switch to SR RECALL.

TV OPERATION

Set the TRANSMIT mode selector switch to VIDEO.



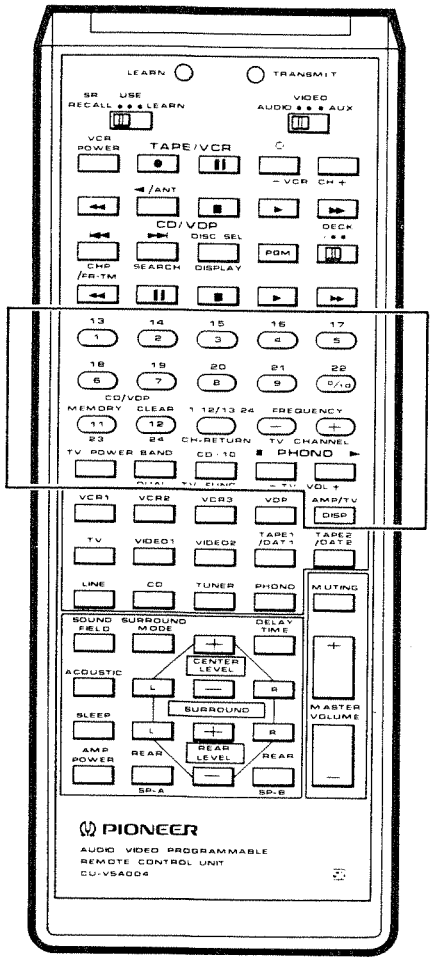
Set the LEARN selector switch to SR RECALL.

TUNER function keys (operation of FM/AM Tuner)

1 to 12 (STATION CALL) keys:
For recall of tuner presets.
1•12/13•24 (mode selector) key:
Switches between Mode 1 (1 to 12) and Mode 2 (13 to 24).
FREQUENCY + (UP):
Shifts the frequency up.
FREQUENCY – (DOWN):
Shifts the frequency down.
BAND key:
Switches the FM and AM (MW and LW) bands by turns.

PHONO function keys (operation of turntable)

PHONO ► (PLAY) key:
Selects play.
PHONO ■ (STOP) key:
Stops play.



TV function keys (operation of component display or projection monitor receiver)

1 to 12 keys:
Used to call up channels.
CH-RETURN key:
Returns to the previously received channel.
TV CHANNEL + (UP) key:
Changes the channel in the direction of larger CHANNEL CALL DIGIT numbers.
TV CHANNEL – (DOWN) key:
Changes the channel in the direction of smaller CHANNEL CALL DIGIT numbers.
DUAL key:
Switches between MAIN, SAP, MAIN/SAP and (MONO). See the TV operating instructions for details.
TV-VOL +, – keys:
Raises and lowers the volume.
TV POWER key:
Switches the power of the TV ON/OFF.
This key has the same function in both the AUDIO and VIDEO positions.
DISP (DISPLAY) key:
Puts display on TV screen. Clears display from screen.
TV FUNC (TV FUNCTION) key:
Selects the TV function.

USE OF LEARNING FUNCTIONS

Introduction

This system remote control can "learn" the commands of other remote control units, regardless of manufacturerer, as long as the other unit is of the infrared type.
In some cases you may still need the original remote control unit for special situations. But as a rule, you will be able to use this Pioneer remote for most system control needs, including video as well as audio equipment.

NOTE:
When using the "LEARN" mode it is a good idea to take the two remote control units to another room. This avoids problems such as sudden high volume output or accidental tape erasure that may occur if particular infrared command signals reach your components. Alternatively, you may wish to unplug your component system. Simply turning off the power may not be sufficient since power on/off switching may also be remote controllable.

LEARNING KEYS

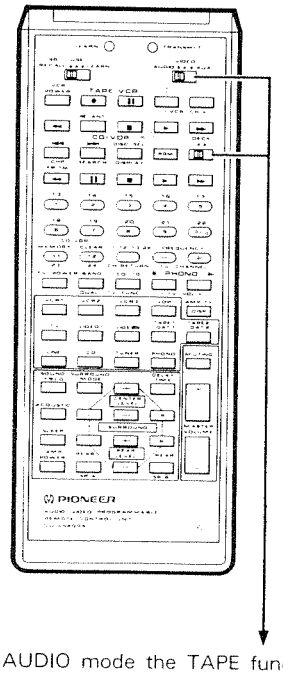
All the keys can be programmed. After learning one command, the next can be learned. (They can be changed.)
When you first use the remote control unit, in the AUDIO and VIDEO modes, it is already programmed with the Pioneer unified remote control code. If your audio and video equipment consists of Pioneer components, the remote control unit can be used as it is. If you wish to program functions which do not already exist in the memory, use the LEARN function. It is also possible to return to the original Pioneer commands after programming other commands. (Refer to "Returning to the Initial Settings" for this procedure.)

- In each mode, one function per key can be programmed.
- When presetting keys, make sure that the remote control units of both this and the other component are loaded with fresh batteries.
- Programming may be impossible from some special types of infrared remote control units.

LEARNING CAPACITY

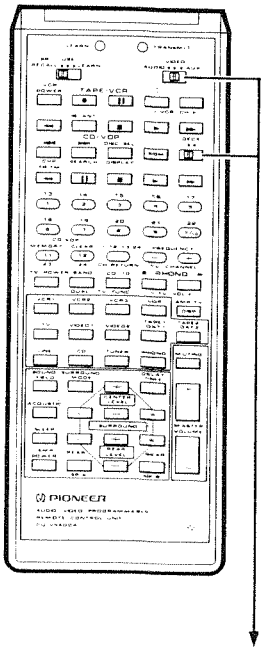
A maximum of 226 commands can be learned (About 150 commands are adequate for Pioneer's remote control signal). More commands than this can't be programmed even if there are keys which have not been preset.

AUDIO mode



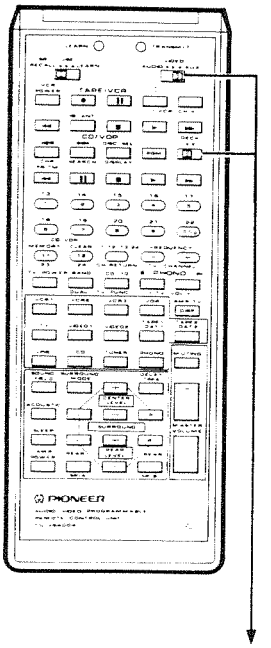
In the AUDIO mode the TAPE function keys can be preset for DECK I or DECK II. After the keys have been preset for one deck, the switch can be moved to the other side, and the keys can then be preset for the other deck. In any other position these keys function in the same way as a Pioneer unified remote control unit. (A maximum of 82 keys can be programmed)

VIDEO mode



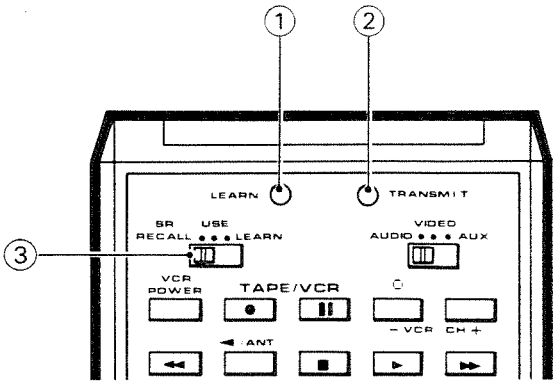
In the VIDEO mode the DECK I/DECK II switch is inoperative. (A maximum of 72 keys can be programmed)

AUX mode



In the AUX mode the DECK I/DECK II switch is inoperative.
(A maximum of 72 keys can be programmed)

When teaching functions with names that differ from those of the keys, write in the names or codes of the functions on the included templates and place on the panel.



① LEARN indicator

This indicator lights when the Learn function is operating

LIT:

Learning is possible.

OFF:

Regular remote control functions can be performed.

NOTE:

If the LEARN indicator flashes, it indicates that the program capacity has been exceeded and that the last command has not been properly memorised. All previously programmed commands will, however, be retained in memory and can be used as they are if the last command is not essential.

② TRANSMIT indicator

This indicator flashes when remote control signals are sent.

③ LEARN selector switch

This can be set as follows:

LEARN:

This position is used for storing the codes of your remote control unit.

USE:

Set to this position after codes have been stored in the LEARN position. (Set to this position when using memorized commands.)

SR RECALL:

Set to this position when transmitting Pioneer unified remote control code signals (Marked on the remote control unit).

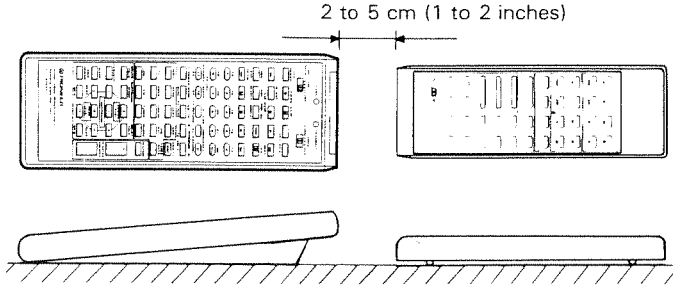
Set the TRANSMIT MODE switch to AUDIO or VIDEO. In the AUX mode, only the receiver remote control code is transmitted.

Operation Example

Using the remote control unit of your VCR to program the playback command.

- It is recommended that the name of the key and its function correspond. This is convenient when operating equipment.

1. **Set the LEARN switch of the programmable remote control unit to the LEARN position and set the TRANSMIT mode selector switch to the VIDEO position.**
   - Programming is possible with the TRANSMIT mode selector switch in any position, but VIDEO is used as an example.
2. **Place the transmission sections of the programmable remote control unit and the remote control of the VCR facing each other.**



   - Place the two units on a table, separated by 2 to 5 cm (1 to 2 inches).
     Memorization will not be possible if they are too close.
3. **Hold down the VCR PLAY (►) key of the programmable remote control unit until the LEARN indicator lights up, then release the key.**
4. **Hold down the PLAY key of the VCR remote control unit.**
5. **Release the key of the VCR remote control unit after making sure that the LEARN indicator has gone out on the Pioneer remote control unit.**
6. **Set the LEARN selector switch of the programmable remote control unit to the USE position.**
   - The previous code (Pioneer uniform remote control code or code for other equipment) is erased and replaced by the new code.
7. **Check that the program works.**
   - Try actual operation and make sure the unit works properly.
   - If the VCR does not operate when pressing the key, change angle, position and distance between both remote control units and repeat the programming procedure.
   - When programming, make sure that the function indications (for example, ►, ►►, ■) on the other remote control unit and the programmable remote control unit are the same. This will facilitate operation.

Questions and Answers about the Learning Function

Q: The remote control unit of my VCR has two REC (recording) keys. They both have to be pressed at the same time to start recording. What is the learning procedure in this case?

A: Hold one of the keys on the programmable remote control depressed (for example the VCR ● key) until the LEARN indicator lights up, and then press the two keys on the VCR remote control simultaneously.

Q: The remote control unit of my VCR has a REC (recording) key and a PLAY (playback) key and they both have to be pressed at the same time to start recording. What is the learning procedure in this case?

A: Hold one of the keys on the programmable remote control depressed (for example the VCR ● key) until the LEARN indicator lights up, and then press the REC and PLAY keys on the VCR remote control simultaneously.

- As described above, operations which require two keys to be pressed at the same time are programmed by pressing the two keys simultaneously.

Operating other equipment by the programmable remote control unit

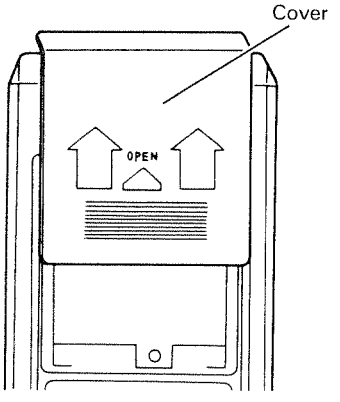
1. **Set the LEARN switch of the programmable remote control unit to the USE position.**
2. **Set the TRANSMIT mode selector switch to the desired position (AUDIO/VIDEO/AUX).**
   - Set to the VIDEO position for programming as described in the example.
3. **Press the key of the desired function.**
   - The TRANSMIT indicator lights up while the remote control unit is sending codes.

NOTE:

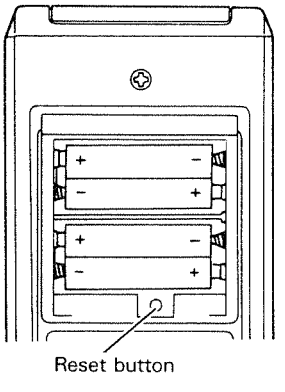
- *When operating programmed keys, always set the LEARN switch to the USE position. Operation is not possible in the LEARN position.*
- *For functions which require two keys to be pressed at the same time (recording etc.) or functions for which several codes are sent simultaneously (auto functions, timer programming, etc.) the programming procedure is different and improper operation may occur.*

Returning to the Initial Settings

1. **Set the LEARN selector switch to the LEARN position.**
2. **Remove the battery cover.**



3. **Press any of the keys available for programming. The LEARN indicator will illuminate.**
4. **Use a ball-point pen or similar object to press the RESET key while the LEARN indicator is flashing.**
   The indicator will flash a number of times. Continue pressing until it goes off.



- The programmed functions for the AUDIO, VIDEO and AUX positions are cleared, and the remote control unit is reset to the Pioneer uniform remote control codes.
- Press the button gently; do not use excessive force.

SUPERIMPOSE

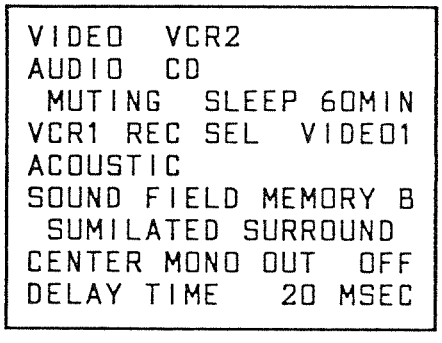
Press the remote control unit AMP/TV DISP key and the present settings are displayed. Press it again and the display goes off. If an operation switch is pressed, the operation settings are displayed.

Applicable operation keys

(Indications are not displayed for keys in the shaded area.)

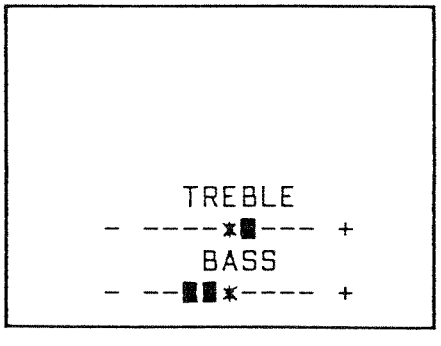
Example 1:

When the remote control unit AMP/TV DISP is pressed for DISPLAY ON (display of the main function settings).



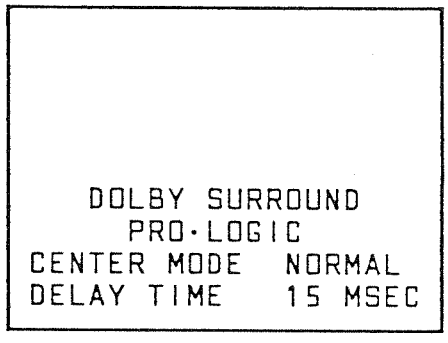
Example 2:

When adjusting sound quality with the TREBLE and BASS switches.



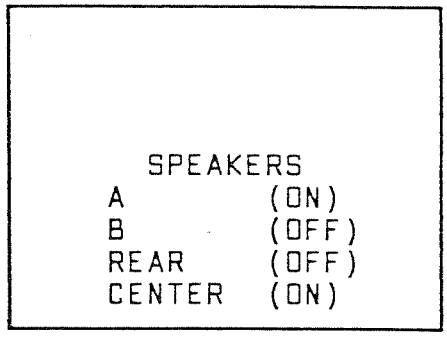
Example 3:

When DOLBY PRO LOGIC SURROUND is ON.



Example 4:

When operating the speakers switches.



- Display of playback is not possible from a component connected only by a regular pin jack but not by the S-VIDEO input.
- If the S-VIDEO input signal and the signal from the VIDEO ADAPTOR IN are different, anything superimposed will be unstable.
- The video signal format is NTSC color system.
  The televisions for PAL or SECAM system cannot be used.
- A gray background is displayed if an S-VIDEO connector is used when there is no video signal.

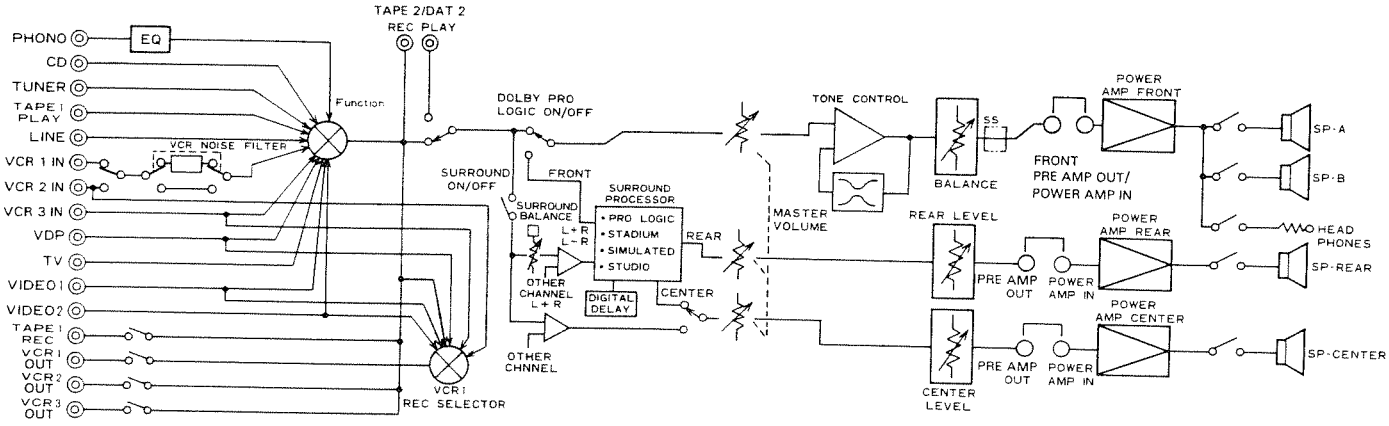
TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Problem		Probable cause	Remedy
No power.		• The power plug is not inserted in the wall socket. • It is plugged into the power outlet of another appliance which is switched off.	• Plug into the wall socket. • Turn on the power to other appliances.
No sound.		• The MUTING (−∞) switch is on. • The connecting cord plugs are incorrectly attached to the jacks or connected to the wrong jacks. • The jacks or plugs are dirty. • SPEAKER switches are turned OFF. • The connector bars of the PRE OUT jacks or POWER AMP IN jacks are disconnected.	• Switch the MUTING (−∞) off. • Check the connections. • Clean the jacks and plugs. • Press the SPEAKER switch to turn ON. • Connect the connector bars. (Refer to page 16)
	In cases other than Tape 2.	• The TAPE 2/DAT 2 MONITOR is ON. • The input selector switch setting is not appropriate for the source selected. • There is a mistake in the operation of another component.	• Set the switch to OFF. • Change the switch correctly. • Refer to the instruction manuals of other components being employed.
	In the case of Tape 2.	• The TAPE 2/DAT 2 MONITOR is set to OFF. • Incorrect operation of the tape deck.	• Set the switch to ON. • Refer to the tape deck instruction manual.
No picture.		• The connecting cord is not firmly plugged in to the jacks, or it is attached to the wrong jacks. • The jacks or plugs are dirty. • The input selector switch is in the wrong position. • The VIDEO ADAPTOR switch is ON. • Other components are not being operated correctly.	• Check the connections. • Clean the jacks and plugs. • Change the switch correctly. • Set the switch to OFF. • Refer to the instruction manuals of other components being employed.
Sound from only one speaker.		• The connecting cord or speaker cord is loose. • The balance adjustment is incorrect.	• Check the connections. • Press the left and right balance switches at the same time to reach the center position.
Recording on tape is impossible.		• Incorrect operation of the cassette deck.	• Refer to the cassette deck instruction manual.
Copying of tapes is impossible.		• Incorrect operation of the cassette deck.	• Refer to the cassette deck instruction manual.
There is no surround sound.		• The surround switch is OFF. • The input sound is mono but the mode is STUDIO, STADIUM or DOLBY PRO LOGIC SURROUND. • The front and rear speakers are connected in reverse. • The input selector switch is not appropriate for the component playing.	• Select the surround mode with the SURROUND MODE switch. • Switch ON the SIMULATED SURROUND. • Check that the connections are correct. • Change the switch correctly.
The remote control unit does not work.		• Batteries dead or no batteries in remote control unit. • Poor angle or too great a distance from the remote sensor window. • There is an obstacle between you and the remote sensor window.	• Insert battery. Or change to new battery. • Use within seven meters and within a 30 degrees angle left or right of the remote sensor window. • Change your position or move the obstacle.
Optional components can't be controlled by the remote control unit.		• The control cord is not connected.	• Connect securely. (Refer to page 17)

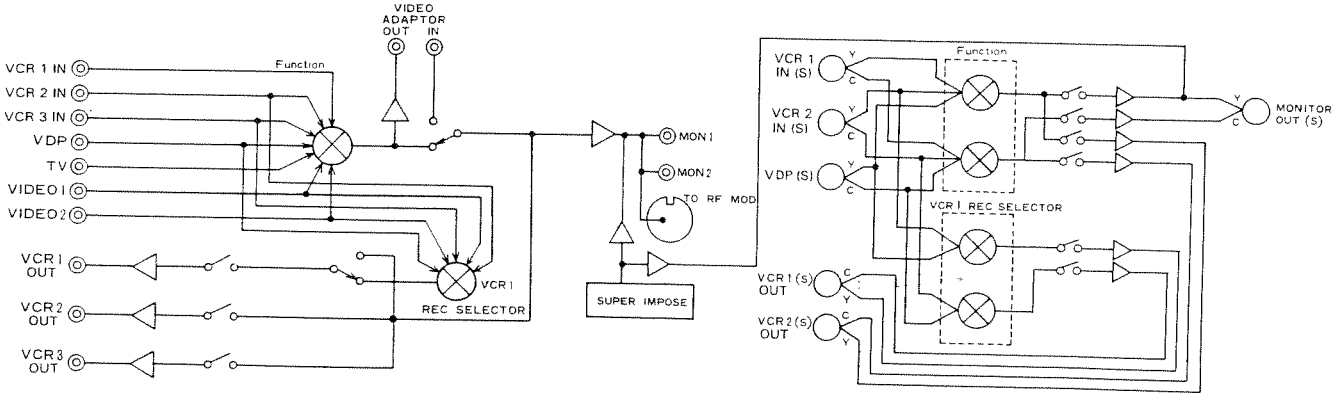
• If the indicator does not light when the power is on, or nothing happens when any operation switch is pressed, remove the plug from the power outlet. Wait about 10 seconds and insert the plug into the power outlet again and check whether the power is on.

BLOCK DIAGRAM



(AUDIO)

(VIDEO)



SPECIFICATIONS

Amplifier Section

[POWER AMP IN]

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.005% total harmonic distortion (front); 30 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.08%** total harmonic distortion (surround); 30 watts*, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.08%** total harmonic distortion (center).**

Dynamic power (2 Ω/4 Ω/8 Ω) ..... 250 W/220 W/150 W

Audio section

Signal to noise ratio (IHF, A network, shorted)
- PHONO ..... 83 dB
- VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, TAPE 1/DAT 1, TAPE 2/DAT 2, LINE, CD, TUNER..... 98 dB

Signal-to-noise ratio [EIA, at 1 W (1 kHz)]
- PHONO ..... 77 dB
- VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, TAPE 1/DAT 1, TAPE 2/DAT 2, LINE, CD, TUNER..... 80 dB

Damping factor (1 kHz, 8Ω) ..... 100 or more

Input (sensitivity/impedance)
- PHONO ..... 2.5 mV/50 kΩ
- VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, TAPE 1/DAT 1, TAPE 2/DAT 2, LINE, CD, TUNER..... 150 mV/30 kΩ
- POWER AMP IN ..... 1 V/50 kΩ

Phono overload level (T.H.D. 0.1%, 1 kHz) ..... 150 mV

Frequency response
- PHONO (RIAA equalization) ..... 20 Hz to 20 kHz, ±0.3 dB
- VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, TAPE 1/DAT 1, TAPE 2/DAT 2, LINE, CD, TUNER..... 5 Hz to 100 kHz, $^{+0}_{-3}$ dB

Output (level/impedance)
- TAPE 1/DAT 1, TAPE 2/DAT 2 REC..... 150 mV/2.7 kΩ
- VCR 1, VCR 2, VCR 3 AUDIO OUT ..... 150 mV/2.7 kΩ
- PRE AMP OUT..... 1 V/220Ω

Tone control
- BASS..... ±8 dB (100 Hz)
- TREBLE..... ±8 dB (10 kHz)

Filter
- VCR NOISE FILTER ..... 100 Hz, 5 kHz, −3 dB

Muting..... −∞

Loudness contour ..... 100 Hz/+6 dB, 10 kHz/+3 dB

Video section

[Base band terminals]

Input (sensitivity/impedance)
- VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, VIDEO ADAPTOR 1 Vp-p/75Ω

Output (level/impedance)
- VCR 1, VCR 2, VCR 3, VIDEO ADAPTOR, TO MONITOR TV 1, TO MONITOR TV 2 ..... 1 Vp-p/75Ω

Frequency response
- VCR 1, VCR 2, VCR 3, VDP, TV, VIDEO 1, VIDEO 2, VIDEO ADAPTOR (to TO MONITOR TV 1, 2) 10 Hz to 10 MHz, $^{+0}_{-3}$ dB

DG/DP ..... 2% / 2°

Signal-to-noise ratio ..... 55 dB

Cross talk ..... 55 dB (3.58 MHz)

[S terminals]

Input (sensitivity/impedance)
- VCR 1, 2, VDP ..... Luminance signal: 1 Vp-p/75Ω
  Color difference signal: 0.286 Vp-p/75Ω

Output (level/impedance)
- VCR 1, 2, TO MONITOR TV..... Luminance signal: 1 Vp-p/75Ω
  Color difference signal: 0.286 Vp-p/75Ω

Frequency response
- Luminance signal..... 10 Hz to 10 MHz, $^{+0}_{-3}$ dB

Signal-to-noise ratio
- Luminance signal..... 55 dB

Cross talk ..... 55 dB (3.58 MHz)

Surround section

Input (sensitivity/impedance)
- REAR, CENTER (POWER AMP IN) ..... 1 V/50 kΩ

Output (level/impedance)
- REAR, CENTER (PRE AMP OUT)..... 1 V/470Ω

Frequency response (at DOLBY PRO LOGIC SURROUND)
- VDP to REAR SPEAKERS..... 20 Hz to 6 kHz, $^{+0}_{-3}$ dB

Miscellaneous

Power requirements
- U.S. model ..... AC 120 V, 60 Hz
- Other destination models ..... AC 110/120 - 127/220/240 V (switchable), 50/60 Hz

AC outlets
- U.S. model..... SWITCHED x 3: TOTAL 300 W MAX
  UNSWITCHED x 1: 200 W MAX
- Other destination models ... SWITCHED x 2: TOTAL 300 W MAX
  UNSWITCHED x 1: 200 W MAX

Power consumption
- U.S. model ..... 300 W (UL)
- Other destination models ..... 800 W
- In standby condition ..... 3 W

Dimensions ..... 420 (W) x 162 (H) x 421 (D) mm
16-17/32 (W) x 6-3/8 (H) x 16-9/16 (D) in

Weight (without package) ..... 12.5 kg (27 lb 9 oz)

Furnished parts

- Dry cell batteries 4
- Remote control unit 1
- Template 2
- Operating instructions 1
- Connection cords (U.S. model only)
  - Audio/video cord 1
  - Video cord 1
  - Audio cord (stereo-mono) 1

NOTE:

Specifications and design are subject to change without notice due to improvements.

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*

** *Measured by Audio Spectrum Analyzer.*

CLEANING

Ordinarily, use a soft cloth to wipe the exterior.
If very dirty, dissolve a neutral dish cleaning fluid in water, moisten a soft cloth with the solution, wring out the cloth to remove excess liquid, and wipe away dirt. Never use alcohol, paint thinner, benzene, insecticides, or other solvents or sprays on this unit. The surface legends and finish may be damaged. Read instructions carefully before using treated dust cloths.